

Knowledge and Reality B: Lecture Seven

1. Time

Intuitively, there are certain features we think time has:

Things that don't presently exist, don't exist.

Ghenghis Khan does not exist. He *once* existed; he *did* exist; it *was* the case he existed. But, intuitively, if I asked you to list the things that existed, he wouldn't be one of them. Isn't that why death is so worrying? Because, afterlife aside, we cease to be? Ditto for future things. Outposts of Mars don't exist (although they might do one day) Genetically engineered dinosaurs don't exist (although they might do one day)

The present moment is in some sense more important than past or future moments.

Of course it is! Firstly, *only it exists*. Secondly, the *present* things worry you a lot more than past and future things. You don't worry about dentist's appointments in the *past*. And if you worry about them in the future that's only because you're worried about what'll happen *when they become present*. That a moment is present makes it special in some way – or so the intuition goes.

Time has a direction.

Time goes forwards. You are inexorably dragged forwards in time. You can't go back, or stay just in the present, or go forwards at a different rate – you're always going forwards at the rate of 1 second per second.

2. Space

Space is radically different:

Things exist in space, even though they don't exist nearby in space

Obviously so! Just because the Eiffel Tower isn't here in Birmingham doesn't mean it doesn't *exist*. Small children may think that things don't exist if they can't see them, but we know better. Not being here has nothing to do with whether it exists or not.

'Here' isn't special.

Similarly, 'here' is an *indexical* term. All it does is pinpoint where you mean relative to what you say. It doesn't serve to pick out a *special* place. 'Here' isn't anymore interesting than 'over there' – at least, not in terms of metaphysics (maybe aesthetically it's better; or it's warmer; or safer etc.)

No direction in space is special.

You can go anywhere you like in space. Sometimes it's *hard* to go there – as in you have to defeat gravity to go up, or navigate around physical objects to get somewhere. But, essentially, anything can go anywhere in space whatsoever. Space doesn't flow, or have a direction.

3. The Metaphysics of Time

Distinction One: Presentism/Eternalism

Is there just the present moment? That's what folk intuition says. Call that position *presentism*. But the alternative is that, just like all places in space exist, all moments of time exist. They don't exist *now* – you can't catch a plane to 1066 AD – but they nonetheless exist. These people are called *eternalists*.

Distinction Two: A-theory/B-theory

The intuitive view said that there was something somehow 'special' about the present moment. Obviously the presentist says this – *of course* it's special, it's the *only* time that exists! Those who think that the present moment is special is called an 'A-theorist'. Why 'A-theorist'? It's all to do with J.M.E. McTaggart.

Consider some *tensed facts*:

1066 is in the past

I am presently giving a lecture

In the future, the sun will explode.

McTaggart arbitrarily labelled them 'A-facts'

The A-theorist thinks that the A-facts are special or more fundamental to time. This is compared to tenseless facts, or B-facts:

The Battle of Hastings is later than the Jurassic period.

World War I is before Obama's winning the American election.

The arrival of the first man on Jupiter is later than this lecture.

These relations are tenseless (note they don't change) Some philosophers think B-facts are more fundamental – that the B-facts ground all other facts about time. They're called B-theorists. (Sometimes 'detenser' as they remove 'tense'; whereas A-theorists are tensors.) So they don't think that 'present' is special at all! Instead, 'now' functions just like 'here'. 'Now' just happens to be the time I'm at; just like 'here' is just the place I happen to find myself at.

Most eternalists are B-theorists (and most B-theorists are eternalists). They spatialise time – thinking that time is just like space.

4. Arguments for Eternalism/Against Presentism

Arguments from analogy

One move is to list lots of ways in which space and time are analogous. Taylor's article has many such ways. Rather than spoiling the seminar fun, I'll let you try and get to grips with those analogies. The eternalist leaps upon them and says: 'If time is analogous to space in *those* ways why not with regards to time flowing, what things exist (etc.)?'

Arguments from things at other times

Recall universals. One reason to believe in them was to account for sentences like:

'Red resembles orange more than it does blue'

It appears to say that *there is* one thing that resembles another thing more closely. That *there is* a property *redness*; ergo that universals exist. We can make a similar move against presentism. When I say:

'Ghenghis Khan is more like Stalin than Churchill'

I seem to be saying that there are three different people who stand in certain relations to one another. But how can the *presentist* say that? How can Ghenghis resemble Stalin *if neither of them exists*? So it's just like the universals case – we seem to be committed to these things existing (which the eternalist can say!)

Arguments Against the Flow of Time

If time flowed, it must flow at a certain rate. But what rate could that be? Does it make any sense to say it flows at 5 seconds per second? No! If anything, it goes at a constant rate of 1 second per second. So that's a worry – if it flows, why can't it 'flow' faster? And if it doesn't make sense to say it flows at different rates, why does it make sense to say it flows at *that* rate?

There are other reasons to be worried (the next one comes from van Inwagen) To say that it goes at 1 second per second is to say it goes at 1s/s. But 1s/s is just to take the s and then divide it by the s (i.e. 1s multiplied by s-1). But that just leaves '1'. The rate of time flows at... 1. 1 what? What's the unit?

Arguments from Science

I won't dally on this one: some people think science, specifically special and general relativity, demand that eternalism is true. That is, *physicists* already talk about the world as if eternalism is true – and who are we to say they're wrong? But I won't go into this, as this isn't a physics course. **By all means look into it yourself.**

Time Travel

Recall I said that in space you could go wherever you want, but in time you could only go forwards. If space and time are analogous then apparently we *could* move through time (although see Taylor, who says this *isn't* the correct analogy). That is, that we could time travel. So imagine I get into my time machine, and go back in time to 1930. Is that possible? What if I met my grandfather. Driven by an anal need to participate in bizarre thought experiments, I decide to kill him back in 1930. This is called the *Grandfather Paradox*. If my grandfather dies in 1930, he never met my grandmother. So my father was never born. So I was never born. But if I was never born, how can I be in 1930 doing him in? Contradiction! Paradox!

I'll leave you to think about that one – but chew this over first. Scientists also think that time travel might be possible. There are more than a few, albeit difficult to achieve, proposed methods to travel in time knocking around the serious journals (often under the moniker 'closed timelike curves'). So this sounds like a serious philosophical issue.

Moreover, if time travel *was* possible some people think this demonstrates that eternalism *has* to be true. If I can travel back to 1066 AD, doesn't it have to *be there* for me to travel to? Ditto for the future. If my future self turns up to help me out with my love life (I pray every evening...) doesn't the future have to exist for him to come *from*? What can the presentist say about this?