McTaggart’s Paradox

Test:
1. What important event took place on December 16, 1773?

I do not believe in linear time. There is no past and future: all is one, and existence in the temporal sense is illusory. This question, therefore, is meaningless and impossible to answer.

When in doubt, deny all terms and definitions.
John McTaggart Ellis McTaggart

- J.M.E. McTaggart was a 19/20th century British philosopher.

- Notably, like Zeno, Kant, and others, McTaggart was an idealist who thought the material world was an illusion.

- He tried to show this by showing that a material world as it is normally conceived would be contradictory.

- Today we are looking at his proof that time is impossible. As he puts it:

  I believe that nothing that exists can be temporal, and that therefore, time is unreal.
The key to understanding McTaggart’s paradox is a distinction he gives between two types of temporal properties: A-properties and B-properties.

305. Positions in time, as time appears to us *prima facie*, are distinguished in two ways. Each position is Earlier than some and Later than some of the other positions. To constitute such a series there is required a transitive asymmetrical relation, and a collection of terms such that, of any two of them, either the first is in this relation to the second, or the second is in this relation to the first. We may take here either the relation of “earlier than” or the relation of “later than,” both of which, of course, are transitive and asymmetrical. If we take the first, then the terms have to be such that, of any two of them, either the first is earlier than the second, or the second is earlier than the first.

In the second place, each position is either Past, Present, or Future. The distinctions of the former class are permanent, while those of the latter are not. If M is ever earlier than N, it is always earlier. But an event, which is now present, was future, and will be past.
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We can think of time as a line and any portions of that line as events. What McTaggart is pointing out is that the events on a timeline seem to have some temporal properties that change and some that are constant. The constant properties are the ones that define a B-series, so we will call them the **B-properties**. B-properties can all be defined in terms of “earlier than” (or “later than”).
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On the other hand, there are some properties which events gain and lose, such as “being past”, “being present”, and “being future”. Properties that events can gain or lose we will call **A-properties**. These are properties that a timeline does not show you; if we model these on a timeline, it looks like a highlighted point moving along the line.

Importantly, one can define **B-properties** in terms of **A-properties**, but not vice-versa.
A-properties: Temporal properties which events can gain and lose (such as “past”, “present”, or “future”)

B-properties: Temporal properties which events have permanently (such as “earlier than” and “later than”)

Consider some examples:

A-properties

B-properties

We have already discussed Zeno’s paradoxes.
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America’s best days are ahead.
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Notre dame plays Michigan State before Stanford.
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Notre dame plays Michigan State before Stanford [in 2016].

I have not taught Paradoxes before.
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I have not taught Paradoxes before [now].

**B-properties**
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When you were in high school your college decision was in the future.
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Are these really two categories of properties? Do things have both?
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McTaggart’s Paradox:
1. If nothing has A-properties, then things do not change.
2. If things do not change, then time is not real.
3. Therefore, if nothing has A-properties, then time is not real. (1,2)
4. Nothing can have A-properties.
5. Therefore, time is not real. (3,4)
Let’s begin with premise 1. Why think that A-properties are necessary for change?

Take any event—the death of Queen Anne, for example—and consider what changes can take place in its characteristics. That it is a death, that it is the death of Anne Stuart, that it has such causes, that it has such effects—every characteristic of this sort never changes. “Before the stars saw one another plain,” the event in question was the death of a Queen. At the last moment of time—if time has a last moment—it will still be the death of a Queen. And in every respect but one, it is equally devoid of change. But in one respect it does change. It was once an event in the far future. It became an event in the nearer future. At last it was present. Then it became past, and will always remain past, though every moment it becomes further and further past.

Such characteristics as these are the only characteristics which can change. And, therefore, if there is any change, it must be looked for in the A series, and in the A series alone.

The claim is, in order for things to change, events must gain and lose temporal properties, but by definition this involves the A-properties. Without A-properties, time is just like a time line; since the time line doesn’t change, things don’t change.
Compare this to Zeno’s paradox of the Arrow.

Just as an arrow is moving if it is in different places at different times, so too change is having different properties at different times.

It is timelessly (or eternally) true that Notre Dame’s football record is 0-0 on September 1, 2016.

Likewise, it is timelessly (or eternally) true that Notre Dame’s football record is 0-1 on September 8, 2016.

One might claim that these two timeless facts constitute change.

Thus, there could be change, even if there were only B-properties.

Philosophers call such a view a B-theory of time.
The B-theory of Time

All temporal properties can be analyzed in terms of one thing being “earlier than” another. Change occurs by things having different properties at different times.

- B-theory seems to imply *Eternalism*—the view that every moment of time exists and is equally real (e.g. 2016 is not any more real than 1500 or 3016).
- Thus, space-time can be viewed as a four-dimensional block, with time merely being another dimension like space.
- Objects in the block can be viewed as four-dimensional space-time worms.
- Change in an object across time is analogous to change in a road across distance.
- Problem: we seem to have time-biased preferences (we say “thank goodness that’s over”), and it is not clear how these make sense in a B-theory, since this would require time to be asymmetric in a way space is not
- Problem: there seem to be facts about “now” that are not reducible to B-theory facts.
Accepting a B-theory of time is one way to solve McTaggart’s paradox, because it allows one to deny premise 1. However, a B-theory of time comes with some costs, so it is worth asking, is there another solution? Might we deny premise 4? McTaggart’s defense of this premise is:

329. Past, present, and future are incompatible determinations. Every event must be one or the other, but no event can be more than one. If I say that any event is past, that implies that it is neither present nor future, and so with the others. And this exclusiveness is essential to change, and therefore to time. For the only change we can get is from future to present, and from present to past.

The characteristics, therefore, are incompatible. But every event has them all. If M is past, it has been present and future. If it is future, it will be present and past. If it is present, it has been future and will be past. Thus all the three characteristics belong to each event. How is this consistent with their being incompatible?
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We can summarize this argument:

1. If an event has any of the properties “past”, “present”, or “future”, then it has all of them.
2. No event can have more than one of “past”, “present”, and “future”.
3. Therefore, no event can have any of the properties “past”, “present”, or “future”. (1,2)
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There seems to be an obvious objection—every event has each of these properties at some time, but no event has them all at one time, and only the latter would be impossible.

McTaggart is aware of this point.

330. It may seem that this can easily be explained. Indeed, it has been impossible to state the difficulty without almost giving the explanation, since our language has verb-forms for the past, present, and future, but no form that is common to all three. It is never true, the answer will run, that M is present, past, and future. It is present, will be past, and has been future.
McTaggart believes that this obvious explanation fails. Here is his explanation:

When we say that X has been Y we are asserting X to be Y at a moment of past time. When we say that X will be Y, we are asserting X to be Y at a moment of future time. When we say that X is Y (in the temporal sense of “is”), we are asserting X to be Y at a moment of present time.

Thus our first statement about M—that it is present, will be past, and has been future—means that M is present at a moment of present time, past at some moment of future time, and future at some moment of past time. But every moment, like ever event, is both past, present, and future. And so a similar difficulty arises.

This argument is difficult to interpret, but the complaint seems to be that once we analyze what it means to say that an event “was future and will be present”, we will realize that we have merely pushed the problem back a step. It seems like now instead of events having “past”, “present”, and “future”, there will be nine properties they can have:
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<table>
<thead>
<tr>
<th>Past at a Past moment</th>
<th>Present at a Past moment</th>
<th>Future at a Past moment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Past at a Present moment</td>
<td>Present at a Present moment</td>
<td>Future at a Present moment</td>
</tr>
<tr>
<td>Past at a Future moment</td>
<td>Present at a Future moment</td>
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</tr>
</tbody>
</table>
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Past at a Present moment
Past at a Future moment
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Present at a Future moment
Future at a Past moment
Future at a Present moment
Future at a Future moment

What McTaggart points out, is that we can just as reasonably say that anything which has any of these 9 properties has all of them, as we could say that anything that has any of the first 3 has all of them. It is no good to say that it merely *was* the case that our moment had “future at a present moment” because this then just pushes the problem back a level, and then we will have a problem with 27 properties.

The regress is vicious. At each stage any event will have inconsistent temporal properties, and pushing back to a different state doesn’t help. So how does one escape the regress without saying that things are past or present relative to 2014 (i.e. by accepting a B-theory)?
One way to avoid the regress is to deny that “it was the case that” is identical to “it is the case at some past time”.

Another way is to deny that “it was the case that at a present time, 2016 is future” because present here does not mean “present to itself” but rather means 2016 (so “present” must always pick out the time at which it is spoken).

Either one follows naturally from what we said earlier, that the A-properties are not analyzable in terms of the B-properties (which is what McTaggart appears to be doing).

Let’s assume we go for the first, it follows that some facts are primitively tensed.

Returning to our spatial analogy, this would be the equivalent that “it is true 500 ft from here that there is my office, but it is not true that there is a place 500 ft from here which is my office.”

While weird in the spatial case, it doesn’t seem as weird as in the temporal case (e.g. The fact that Obama was first elected 8 years ago is not the same fact as the fact that Obama was first elected in 2008).

Philosophers call theories which make use of irreducibly tensed facts A-theories.
The A-theory of Time

All temporal properties can be analyzed in terms of things being either Past, Present, or Future. Claims about the past (or future) are not equivalent to claims about what happens at times earlier than (or later than) 2016.

- This is consistent with three different views of what temporally exists: The Moving Spotlight View, the Growing Block View, and Presentism.
- This seems to make better sense of our experience of time flowing.
- Objects change by gaining and losing properties, not by having different properties relative to different times.
- Problem: it is either difficult to say how the past and future are different from the present, or it is difficult to say what makes true our claims about the past and the future.
- Problem: it is not clear that this is consistent with modern science.