

Introduction to Philosophy

Philosophy 110W

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Class #9: Zimmerman and the A-Theory of Time



McTaggart's Series

- McTaggart argued that time is unreal.
- He relied on a distinction between two ways to understand time:
 - ▶ The A-series
 - ▶ The B-series

The A-Series

- Time consists of temporal properties of individual events.
 - Some of these are in the future
 - Some of these are in the present
 - Some of these are in the past
- We call theories of time based on the A-series A-theories.
- We call the properties in the A-series the A-properties.

The B-Series

- Time consists of temporal relations between events
 - earlier-than
 - at the same time as
 - later-than
- McTaggart argued that on neither approach does our concept of time correspond to any real property or relation.
 - We will not pursue McTaggart's arguments.
- We call theories based on the B-series B-theories.
- We call the relations in the B-series the B-relations.

The A-Properties and the B-Relations

- The A-Properties
 - Future
 - Present
 - Past
- The B-Relations
 - earlier-than
 - at the same time as
 - later-than
- Quick exercise in groups of 3-4
 - Construct sentences about the following events using A-Properties or B-Relations (depending on the group).
 - The first moon landing
 - Watching the video of Miller
 - Where you were when you heard that bin-Laden was assassinated
 - The colonization of Mars

The Present

- A-theories distinguish the present as a particular time property different from all others, from the past and from the future.
- The B-theorist is indifferent among different times.
- The A-theorist believes that the present time is in some way more important or more accessible or more real than other times.

Absolutism and Relationalism

- In the Newton-Leibniz debate, we wondered whether we should be absolutists or relationalists about space.
- Now, we want to know whether we should be A-theorists or B-theorists about time.
- The option is always open to take a third option: neither.
- In that latter case, the idealist alternative might return, for you.

Three A-Theories

- 1. The growing-block theory;
- 2. The moving spotlight theory; and
- 3. Presentism.
- Only the A-theory can support presentism, so any claim for presentism is a claim against the B-theory.

The Intuitive Argument for Presentism

- It is simply *part of commonsense* that the past and future are less real than the present; that the difference between events and things that exist at present, and ones that do not, goes much deeper than the difference between events and things near where I am and ones that are spatially far away... (Zimmerman 221).
- Thank goodness that's over.

My Headache

- Call my headache Crash.
- Crash has certain temporal properties or relations.
 - ▶ It began a little while ago.
 - ▶ It will end a little while from now.
 - ▶ So Crash has one A-property of being several minutes old and another A-property of being only a few minutes away from ceasing to exist.
- In an hour, Crash will have different A-properties.
- For the B-theorist, Crash always has the temporal relations that it does.
 - ▶ It always comes before the final exam for this class and after our high-school graduations.
 - In 1960, Crash was before the final exam for this class and after our high-school graduations.
 - In 2040, Crash will be before the final exam for this class and after our high-school graduations.
 - ▶ The temporal relations of any event are eternal, for the B-theorist.

Science and the B-Theory

- The eternality of events, says the B-theorist, accommodates our best scientific theory of time, Einstein's theory of relativity.
- According to the theory of relativity, reality consists of a four-dimensional space-time manifold.
 - ▶ “One of the most important kinds of [spatiotemporal] structure is exhibited by sets of points that constitute a “straight line” running in a time-like dimension... But these lines are composed of points that must come from different instantaneous slices; so according to the presentist, when one of them exists, none of the others does. This leaves nothing to exhibit the important spatiotemporal structure of a straight line in a time-like direction” (218-9).
- There is nothing in contemporary physics that supports privileging the present over other times.

Us and the A-Theory

- According to the A-theorist, what's most interesting about Crash is that it is happening right now.
- In 1960, Crash wasn't a very interesting event.
- In 2040, Crash will be a not-very-interesting event.
- But, right now, Crash is interesting.
- After it goes away, I will be relieved.
- "Thank goodness that's over."

Presentism and the B-Theory

- Zimmerman claims that the presentist can maintain that present events are the only real ones while accepting that other time-slices of the spatiotemporal manifold still exist.
 - “It is past and future *objects* and *events* that stick in my craw. The four-dimensional manifold of space-time points, on the other hand, is a theoretical entity posited by a scientific theory; it is something we would not have believed in, were it not for its role in this theory; and we should let the theory tell us what it needs to be like” (219).
- There are lots of facts about the world that physics does not represent.
- Physics only really commits to the existence of the most fundamental particles and relations.
- Composite objects, like trees and people, are not really the subject matter of physics.
- Only their component particles are.
- So, we can't look to physics for all of our commitments.
- Since the A-theorist privileges the present, picks it out as more important than other times, where the B-theorist is indifferent to the present, or any other particular time, it follows, according to Zimmerman, that the A-theorist has a more intuitive view of time.

Three Weaknesses of Zimmerman's Argument Against the B-theory

Limits of Intuition

- The more-intuitive view is not necessarily the correct view.
- For a long time, people believed that the sun revolving around the earth was more intuitive than the reverse.
- People have had some pretty bad intuitions about moral facts, as well.
- The last part of Zimmerman's article defends his method.

The A-Theory May Not Be More Intuitive Anyway

- “Point to something in the world,” the objector says, “that *makes it true* that a dinosaur walked past this place 150,000,000 years ago. It *is* true, but there is nothing about the way the world is now that *requires* that it be true or that *makes* it true (218)
- Zimmerman calls this objection the truthmaker objection.
 - ▶ There must be facts which make propositions true or false.
 - ▶ For ‘Some beachballs are red’ to be true, there have to be beachballs and there has to be some property of redness.
 - ▶ If you think that the sentence ‘God exists’ is true, then there has to be some truthmaker for that fact.
 - God?
 - Ray Charles?
- The truthmaker objection is that if you think that propositions about the past are true, as we ordinarily do, then there have to be some facts about the world that make them true.
- But, on presentism, there are no facts about the past, since only the present is real.
- So, presentism is false.

Heinlein's "All You Zombies"

- There is travel between points in time.
- A natural anti-presentist presumption about time in all time-travel stories.
- Heinlein notices some weirdness that arises from taking all moments in time to be equally real.
- The protagonist of the story ends up being her/his own parent.
 - And weirder.

A Third Weakness

- Three different kinds of A-theories.
 - ▶ A defense of the A-theory against the B-theory is not in itself a case for Zimmerman's presentism.
- Not all A-theories privilege the present equally.
 - ▶ A-theorists say that time is a property of individual events.
 - ▶ Presentists differentiate between the reality of the present moment and the unreality of past and future moments.
 - ▶ One could believe that time is a property of individual events, that time is not merely relational, without believing that the past and future are unreal.
 - ▶ So, not all A-theorists are presentists.
- To support presentism, Zimmerman has to defend it against other A-theories, ones which support privileging the present over other times to varying degrees.
- Some of these other A-theories would be more intuitively consistent with the time-travel tales.
- That is the purpose of the majority of Zimmerman's article.

Moving-Spotlight Theory

- Augustine?
- All temporal moments are equally real.
- There is a kind of spotlight on the present which illuminates it.
- The spotlight doesn't change the present, make it more real or more important.
- All moments are equally real, according to the moving-spotlight view.
- We just see the present more clearly.

Moving Spotlight Advantages

- No constant process of creation and destruction.
 - ▶ According to the presentist, as events come into the present, they move from an unreal future state to a real present state: creation.
 - ▶ Then, as they move from being present to being past, they are destroyed.
 - ▶ “And that is just what it is for an event or thing to “move” from the future into the present, and from the present into the past: It is to come into existence and then go out of existence” (212-3).
- According to the moving-spotlight theory, all moments are equally real, and are not in a constant state of change.
 - ▶ Agrees with the B-theorist that we can, for the purposes of our beliefs about what exists in the world, treat all moments in time as equally real.
 - ▶ Differs from the B-theorist in believing that there are individual temporal properties of events.

Growing Blocks

- The past and present are more real than the future.
- The growing-block theorist accepts the moving-spotlight account of the past.
 - The past is just as real as the present.
 - Once an event becomes present, it becomes real, and stays that way.
- But future events are not real.
 - Leaves the future open
 - Freedom to decide the course of the future?

Zimmerman Against Moving Spotlight and Growing Blocks

- Any version of these two A-theories has to give up important claims about the differences between the present and other times.
- “A table yet-to-be-made has no shape or mass or color; and when it is destroyed, it will lack these properties as well” (215)
- “[These views have] less appealing consequences... Headaches can exist but not be truly painful; a horse can exist although it is not actually alive or even spatially located. What’s left of these past things is extremely thin: a physical object can survive a change in which it ceases to have any shape or size; an explosion can continue to exist when all its energy has dissipated” (215-6).
- “When I notice that a headache, or some other painful episode, has become part of the past, I am relieved that this is so; and when a pleasant experience becomes past, I am often disappointed. If a theory of time makes such changes in attitude utterly mysterious, we should have grave doubts about its adequacy” (214).
- The question is whether the B-theory (or an A-theory which does not privilege the present) makes such changes utterly mysterious.