Class 10 - February 18
Smart, "The Tenseless Theory of Time"

0. Older
I. Tenses

This week, we are examining A-theories and B-theories of time.
Smart calls the B-theory the tenseless theory.
In our last class, we looked at Zimmerman's defense of presentism, a version of the A-theory.
Zimmerman's defense of presentism relied on his intuitions about the importance of the present, contrasted with past and future events and objects.
When some thing or event passes from the present into the past, we ordinarily believe that it disappears, that it becomes unreal, that we lose it.
Intuitively, we think of yesterday's breakfast as something which no longer exists, next Thursday's dinner as something which is yet to exist, and these words as something which exist.

As I mentioned in the last set of notes, the strength of our appeals to intuition are a controversial topic.
Smart wants to deny that they have the force of argument that Zimmerman ascribes to them.

> Opponents of the tenseless theory tend to be influenced by the phenomenology of our immediate experience of time, whereas I distrust phenomenology (227).

If we give up our intuitions, or the phenomenology of time, as evidence for our beliefs about reality, then we have to ask what sorts of evidence will suffice.
Smart believes that the only evidence is scientific evidence.
Further, he believes that the most fundamental scientific theories are best understood tenselessly.
Mathematics contains no references to time.
Physics takes time as a variable, but prefers no particular time.
Indeed, the physical laws are indifferent to the direction of time, even though time seems to move only forward.

> Such intrinsic properties [past, present, and future] would be 'spooky' and they are not mentioned in physical theory. In physical theory there is no past and future, only earlier and later (231).

From these considerations, Smart concludes that we should prefer a theory of time which is similarly tenseless.

> Now if, like me, you want to see the world *sub specie aeternitatis* (to echo Spinoza), or "from the point of view of the universe"..., you should want a tenseless language for metaphysics... Tenses and other indexicals make us see the world from a particular and egocentric perspective... (227).

Let's see how we can make a language tenseless.
Here are three tensed sentences.

1. Bonnie bopped Bobby at 4pm yesterday.
2. Bonnie is bopping Bobby right now.
3. Bonnie will bop Bobby tomorrow at noon.

Smart discusses two ways to make such sentences tenseless, which we will now proceed to examine.

II. Reichenbach and the Token-Reflexive Solution

Smart attributes one way of rendering tensed sentences tenseless to Reichenbach, and calls it token-reflexive.
According to the token-reflexive view, we can make 1-3 logically tenseless by replacing all their verbs with grammatically present-tense versions, and make references to time relative to particular utterances.

> TR1. There is a time *t* such that Bonnie bops Bobby at *t* and *t* is earlier than the utterance of 1 (by some measure of temporal distance between 4pm yesterday and the utterance of 1, in arbitrary units).
> TR2. Bonnie bops Bobby simultaneously with the utterance of 2.
> TR3. There is a time *t*, such that Bonnie bops Bobby at *t*, and *t* is earlier than the utterance of 3 (by some measure of temporal distance between the utterance of 3 and noon tomorrow, in arbitrary units).

Note that all references to time are rendered in terms of 'earlier than', 'simultaneous with', or 'later than'.
Those terms are all available to the B-theorist.
No uses of 'past', 'present', or 'future' are required for the characterization of times.

Further, no uses of tenses, other than the present tense, are used by the tenseless theory.
Present-tense verbs are to be understood tenselessly.
We are taking a four-dimensional view.
This view is sometimes called the block theory (in contrast to the A-theorist's growing-block theory).
The idea is that there is a static block, the entire temporal history of the world, past through future.
We imagine ourselves peering from apart at that block, describing all that happens within it.
We need, from a grammatical standpoint, some tenses for our verbs.
But, we think of them as mere grammatical artifacts, indicating nothing about time.
Verbs are grammatically present-tense, but logically tenseless.

One problem with the token-reflexive view is that time seems to outrun all possible utterances.
We might want to say meaningful things about facts about the future that are not simultaneous with any utterance at all.
We can measure their temporal distance from a current utterance.
But, we can not say anything about utterances simultaneous with such events.

> Consider the sentence 'The sun's becoming a supernova is future, will be present and then will be past'. On the token reflexive approach we might try: 'The sun's becoming a supernova *is* later than this utterance, and earlier than some utterance later [than this] (sic) utterance'. This is at best false, since presumably there are no persons or utterances at the time in question... (229).

Smart's suggestion of how to render the supernova sentence might not be the best approach for the token-reflexive theory.
My uses of TR1-TR3 may show a way to avoid the falsity of Smart's approach.
But, the underlying criticism of the token-reflexive approach stands: if we measure time in terms of utterances, we are liable to run into problems about times that are simultaneous to no utterances at all.
Let's take a look at an alternative, Davidson's metalinguistic approach.

III. Davidson and the Date Theory

Smart uses two names for Davidson's approach to time.
Since Davidson gives the semantics (rules for interpretation) of temporal sentences (i.e. tenses) in a metalanguage, Smart calls it a metalinguistic solution.
But, Dyke's name for it, the date theory, is more aptly descriptive, and I will use that term instead.

The date theory relativizes sentences, rather than utterances, to the present moment.

DT1. There is a time $t_1$, such that Bonnie bops Bobby at $t_1$, and there is some other time $t_2$, such that $t_1$ is earlier than $t_2$ (by some measure of temporal distance between 4pm yesterday and now, in arbitrary units).
DT2. There is a time $t$ such that Bonnie bops Bobby at $t$.
DT3. There is a time $t_1$, such that Bonnie bops Bobby at $t_1$, and there is some other time $t_2$, such that $t_2$ is later than $t_1$ (by some measure of temporal distance between now and tomorrow at noon, in arbitrary units).

Smart argues that the advantage of the date theory is its invocation of sentences.

> This seems to have the advantage over the token reflexive approach in that it deals with sentences, not utterances. There is only a finite number of (say) English sentences that ever get uttered, and yet the language contains an infinite number of sentences as abstract objects (229).

Certainly, a theory which invokes timeless sentences is compatible with the supernova sentence in a way that a theory which invokes particular utterances is not.
But, it's not clear from Smart's article how the date theory invokes sentences rather than utterances.
Moreover, the solution to the problem raised by the supernova sentence seems to be to relativize all temporal claims to some claim, whether an utterance or an instance of a sentence, in the present.

> The [date] theory will entail sentences such as "I am tired" *is* true as (potentially) spoken by person *P* at time *t* if and only if *P is* tired at *t*... (229).

The option to relativize temporal claims to some utterance appears to be available to both the token reflexive theorist and the date theorist.

IV. Tenselessness

Let's not worry more about the distinctions among the token reflexive theory and the date theory.
We can just talk about the B-theory.
The central claim of the B-theory is that we can do away with appeals to 'past', 'present', and 'future'.

Zimmerman's presentist relied on claims about the exceptional nature of the present moment.
The B-theorist denies that there is any such exception.
Consider both TR2 and DT2.
For the tenseless theory, the present is just one moment among many.
This factor makes the tenseless theory indifferent to any particular time, and avoids what Smart thinks of as being parochial and egocentric.

Smart puts the difference between the A-theorist and the B-theorist starkly.

> The A-theorist of course will aver that sentences such as 'E was future, is present and will be past' are perfectly intelligible because 'past', 'present', and 'future' (or rather the corresponding abstract nouns) refer to intrinsic properties of events in respect of which events change and so the (in my view *pathological*) [supernova sentence] is perfectly in order and even *platitudinous* (230, emphasis added).

The A-theorist sees the supernova sentence as ordinary and obvious.
The B-theorist sees it as ill-formed, or nonsensical.

V. Economy and Plausibility

We want to know whether to be an A-theorist, or even a presentist, or a B-theorist.
On the side of Zimmerman and the A-theorist, we have our intuitions about the asymmetry of our access to the present moment and past and future moments.
We have the 'thank-goodness-that's-over' feeling.
On the side of Smart and the B-theorist, we have the claim that the laws of physics express the ultimate nature of reality.

> The A-theorist thinks that [considerations of the 'thank-goodness-that's-over' feeling] and an appeal to immediate experience more than compensate for the ontological economy and scientific plausibility of the B-theory. The B-theorist thinks that these considerations do not really support the A-theory (233).

A further consideration which might help differentiate the A-theory and the B-theory concerns the nature of change.
For the A-theory, objects undergo changes as they become real, by moving into the present, and become unreal, by moving into the past.
Of course, the notion of an object as enduring through time has to be adjusted, since objects are only real at the present moment.
For the B-theorist, who can think of objects as existing over time, the notion of change is chimerical.
All of the spatio-temporal realm is taken as a single, static block.
The B–theorist can re-claim some version of change, but it is not an ordinary notion.
Change is ordinarily thought of as an active process.
But, the B-theorist's view of change seems static.

> The B-theorist accommodates the facts of change by tenselessly saying that one temporal stage of a thing or process can differ in certain respects from an adjacent temporal stage (231).

Lastly, Smart attacks presentism directly.

> There is a bizarre form of A-theory called presentism...It is said that we cannot change the past. Equally we cannot change the future...The historical past is earlier than us in Minkowski space and the future is up ahead of us. Both are real. Our actions are caused by our beliefs and desires and in part cause future events. There is not room for the silly sort of fatalism that implies that our decisions do not matter (236).

It's not clear to me why Smart thinks that fatalism is relevant in the discussion.
Fatalism is the view that we are powerless to alter the course of events.
The B-theory is consistent with determinism.
The moving-spotlight theory also takes the spatio-temporal world to be a set block.
Perhaps Smart's point is that the consistency of determinism with the B-theory does not entail that the B-theorist should be a fatalist.
So, an opposition to fatalism should not be interpreted as a defense of presentism.
But, since there are alternative versions of the A-theory, an objection to the B-theory need not be taken as a defense of presentism.
It could be used as a defense of the growing-block theory.

Your jobs, if you choose to write on this topic, is to balance the considerations on either side, and determine which view is more plausible.