

**Phil 420: *Metaphysics*
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[Handout 21]

J. J. C. Smart: *The Tenseless Theory of Time*

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§ The Tenseless Theory of Time = The *B*-theory

1. The ontology of words such as ‘past,’ ‘present,’ ‘future,’ ‘now’ and the temporal inflections of verbs, and the tensed ‘is,’ ‘will be,’ ‘was,’ etc., is *unimportant*.
2. A tensed locution could avoid the tensed inflections of verbs but would say ‘is future,’ ‘is present,’ and ‘is past’ with Tenseless ‘is’.
3. There are no *intrinsic* properties of past, present and future, in respect of which events change.

In contrast, the *A*-theory:

1. ‘Past,’ ‘present’ and ‘future’ refer to *intrinsic* properties of events.
2. These temporal properties of events *can* change.

Smart: I do not really believe in the existence of time but only of space-time, unless one gives the name ‘time’ to a particular ‘world-line’ in space-time.

* But in metaphysics we tend to get into a trade-off or comparison of plausibilities, and only in some cases is it a matter of knock-down proof or, as Wittgenstein said, showing the fly the way out of the fly bottle.

§ The Attractions of the *B*-Theory

1. Mathematical and physical theories are properly expressed tenselessly. Their truths are, in a sense, eternal truths.
2. Tense and other indexicals make us see the world from a particular and egocentric perspective. If you want to see the world “from the point of view of the universe,” you should want a tenseless language for metaphysics. Metaphysics should not be **cosmically parochial**. It should eschew tensed language.
3. The desire for a non-parochial and non-anthropocentric view of the universe provides reasons for liking a tenseless view of time.

Note: (1) Tenseless sentence → eternal sentence

___ An eternal sentence is a sentence whose truth value does not change from time to time or from speaker to speaker. e.g. ‘Snow is white’; ‘2 + 2 is 4’: the “is” is not referring only to the present.

___ An eternal sentence must be a tenseless sentence.

(2) Tensed sentence → indexicals

___ An indexical sentence relies on *contextual features* for its truth value.

§ Two Ways of Treating of Tenses as Indexicals

(1) the token-reflexive approach (Reichenbach) → the utterance treatment

1. **token vs. type:** An utterance of a word or phrase is a “token” of the word or phrase, whereas a word type is an abstract object. (e.g. ‘fire, fire, fire’ is one type of word with three tokens).
2. **Token-reflexive:** Words such as ‘I’, ‘you’, ‘now’, ‘here’, and also tense inflections are token reflective: *they refer to their own utterances*.
3. **‘This utterance’:** In theory we could get by with this single token reflexive. ‘I’ could be replaced by ‘the maker of this utterance’, ‘here’ by ‘near this utterance’, ‘past’ by ‘earlier than this utterance’, and so on.
4. **Temporal predicates:** So ‘past’ = ‘earlier than this utterance’, ‘present’ = ‘simultaneous with this utterance’, ‘future’ = ‘later than this utterance.’ → **B-Theory**

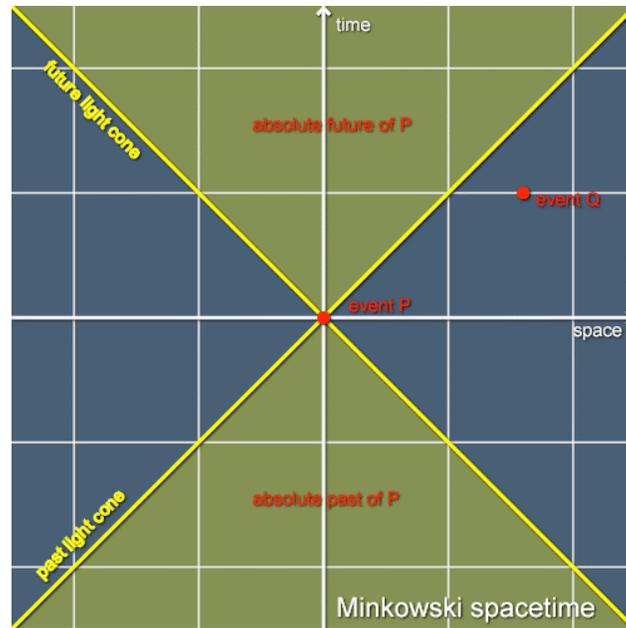
(2) the Date Theory (Donald Davidson) → the sentential treatment

1. This is a metalinguistic approach: a semantics for sentences containing tenses or other indexicals should relativize truth of a sentence to a person and a time.
2. The theory will entail sentences such as ‘I am tired’ *is* true as (potentially) spoken by person *P* at time *t* iff *P* is tired at *t*, and ‘I was tired’ *is* true as (potentially) spoken by person *P* at time *t* iff *P* is tired at a time earlier than *t*.
3. The advantage of this theory is that it deals with sentences, not utterances. (Since some English sentences *might not ever be uttered*).

§ Defense of the B-Theory – how to define *change*

1. McTaggart claimed that time involves change and that the *B*-theory denies change. If event *E* is before event *F*, then according to him it always was and always will be that it is so. But the *B*-theorist does not want to say that instantaneous events change. 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.
2. The *B*-theorist elucidates change as immediately adjacent temporal stages of a thing or process having different properties.
3. **McTaggart went the other way, since he held that change, if it exists, pertains to events, not to things and processes.** The matter of interest is his belief that the *B*-theory denies change in processes and things and his own locating change wrongly in events.
4. **According to the *B*-theory, ‘past’, ‘present’ and ‘future’ are indexical and cannot refer to intrinsic properties.** Such intrinsic properties would be ‘*spooky*’ and they are not mentioned in physical theory.

5. In physical theory there is no past and future, only earlier and later. In Minkowski space-time of special relativity, 'past' and 'future' only mean 'earlier than O' and 'later than O' when O represents the light cones at a point O.
6. In special relativity there is no absolute space-time and there is no *cosmic present*.



§ Critique of the A-Theory

1. Special relativity may be felt as a problem for the A-theorist, who believes in an objective and universal present, and even more if she believes in a cosmic advance through time.
2. Furthermore, there are speculations that universe may be spawned from the backs of black holes, thus arising from new big bangs. This suggest that the A-theory's usual idea of a single ordering of past, present, and future may need revising.
3. The A-theory's ideas of past, present, and future, and also tenses, are metaphysically mysterious, whereas the B-theory's indexical treatment is much more plausible.
4. The A-theory's tensed discourse also facilitates the supposed intuition of the passage of time in immediate experience: *thank goodness that's over*. The B-theorist thinks that this sort of consideration does not support the A-theory.

§ Thank Goodness That's Over

Prior, "Thank Goodness That's Over" (1959)

Why should anyone thank goodness for *that*? Certainly it is not just a matter of your thanking goodness that something is earlier than your utterance. It is an expression of relief.

On the other hand, if you said to a physician “My pain has stopped,” your intent might be to give him useful diagnostic information. And though not very idiomatic, “My pain is earlier than this utterance” would serve the physician equally well.

Smart’s Analysis:

1. This case raises deep questions about the temporal asymmetry of the universe and about the theory of evolution: *We are future oriented.*
2. We are future oriented because we need to plan or at least take quick action.
3. It is this asymmetry between earlier and later that makes us care about the future in a way in which we do not care about the past (though we may rejoice in or regret the past).
4. Evolution by natural selection has seen to it that our minds are turned predominantly to thinking about what will, or will be likely, happen later.
5. E.g. A prisoner who has served nine years of a ten-year sentence is relatively happy that he has only one year left to serve, whereas if he has served one year of a ten-year sentence, even though he is just as temporally near freedom, he will be less happy.
6. The past is simply not in the time direction in which our planning and emotions are usefully oriented.
7. We say “thank goodness that’s over” when pain or unpleasantness is no longer something about which we need to plan and make decisions.
8. Therefore, it comes down in the end to the temporal asymmetry of the universe, not to temporal flow or coming to be.

§ The Supposed Passage of Time

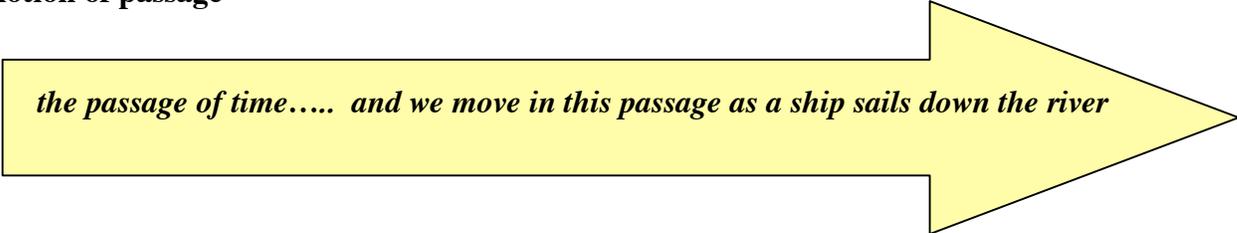
The myth of *passage* is cognate with what I regard as the equally absurd idea that we advance through time. I am convinced that the flow of time is a metaphysical illusion. It is a confused phenomenology that makes us feel that we are aware of a continuous passage of time, analogous to the flow of river.

Examples of confusion:

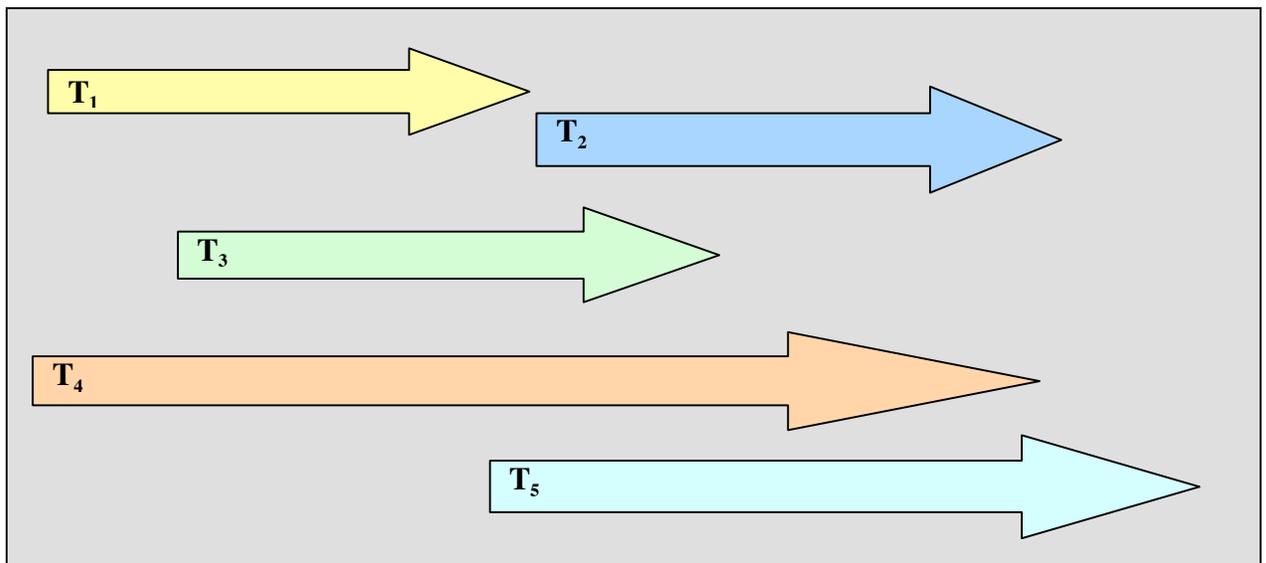
- (i) as we move into the twenty-first century
- (ii) time like an ever-rolling stream bears all its sons away
- (iii) one’s wedding day is coming toward one, though all too slowly

A move against this confusion is to ask: How fast is this flow of time or our advance through it? → ‘the rate of passage argument against the notion of time flow or the notion of passage’

the passage of time..... and we move in this passage as a ship sails down the river



* **Smart: the space-time theory** – There are different world-lines, each of which has *earlier than, later than* relationships; there is no single time that is *the time*



1. In space-time, motion and rest are a matter of parallelism and inclination of world lines. To say that two particles are at rest with respect to one another is to say that they (or tangents of them) are parallel, and motion is a matter of them or their tangents being inclined to one another.
2. Minkowski: “Henceforth space by itself and time by itself are doomed to fade away into mere shadows, and only a kind of union of the two will preserve an independent reality.”
3. **Not all world-lines are parallel**; hence, the Minkowski space is not “static.” Relative motion is represented in the Minkowski picture by relative inclinations of world lines and acceleration by curvature of world lines. No fact of motion is lost.

§ Presentism and Fatalism

1. **I reject Presentism. Both past and future are real.**
2. **The historical past is earlier than us in Minkowski space and the future is up ahead of us. Both are real.**
3. **Our actions are caused by our beliefs and desires and in part cause future events.**
4. **This is not the silly sort of fatalism.**