

Static time

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Contemporary B-theory

- time not unreal, but exists as dimension of static four-dimensional continuum—“spacetime”—in virtue of which properties of objects can change
- change: the having of different properties at different “locations” in this additional dimension
- unlike McTaggart, modern B-theorists believe that time does not essentially include a moving now—and thus escapes McTaggart’s argument
- B-theorists hold that common beliefs that time passes and that there is an objective difference bw past, present and future are **false**

⇒ positive and negative task for B-theorist:

- negative: offer reasons for thinking that above mentioned beliefs are false
- positive: account for our experiences and our false beliefs about time

The natural view

Characterization (The natural view)

The natural view of time holds that only the present is real, the future is non-existent and as yet open/unfixed, while the past is fixed without existing in the same way as the present. Furthermore, the present is advancing, i.e. time passes.

Questions:

- What kind of reasons could be given for the claim that past is fixed, while the future is not?
- What kind of reasons could be given that the future does not exist?
- What kind of reasons could be given that the past is not real in the same sense as the present?
- What kind of reasons could be given that time passes?

The presence of experience

Thesis (Confinement doctrine)

“[T]he objects we perceive may not be present but the sensory experiences we have when we perceive them surely are. Conscious experiences are confined to the present.” (Dainton, 29)

Question. How can the B-theorist account for this confinement?

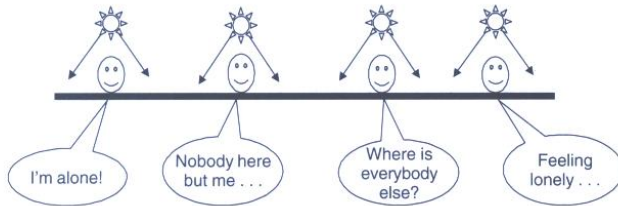


Figure 3.1 Illusory spatial solitude. Since it is dark, and light emitted by the lamps fades away after travelling only a couple of feet, no one can see their neighbours, so everyone concludes they are alone in the field. But they are wrong.

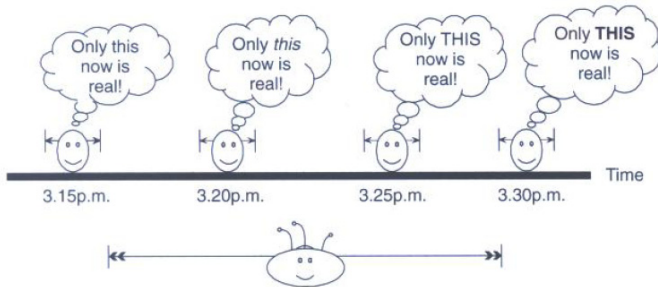


Figure 3.2 Illusory temporal solitude. According to the block theorist, the impression we have that reality is confined to a very brief present is (in part) due to the fact that the span of our direct awareness (or “specious present”) is very brief. The “lived present” of a being with a wider span of awareness (such as the alien depicted here) would include times we would regard as past and future.

Experiencing passage



- We experience passage bc of the way in which memories accumulate.
 - **Korsakoff** syndrome: degenerative brain disorder caused by the lack of vitamin B₁ in the brain, induces memory loss
 - Permanent anterograde amnesia: sufferer doesn't remember anything after onset of amnesia for more than brief period of time
- ⇒ memory-impooverished condition disables experience of passage
- Similar memory effects lead us to believe that our lives unfold in direction of future.

Truth and truthmakers

Definition (Truthmaker)

A truthmaker for a true proposition or statement about the world is the concrete entity by virtue of which the proposition is true. Usually, truthmakers are considered to be facts about the world that obtain.

Definition (Falsemaker)

Falsemakers, i.e. whatever makes a statement about the world false, are the existent reality by virtue of which the statement is false. Sometimes, falsemakers are considered to be the absence of facts about the world that would render the proposition true; this absence is a fact itself, albeit a “negative” one.

A-statements

Examples:

B-statement: “Caesar’s crossing of the Rubicon is in 49BCE.”

A-statement: “Caesar’s crossing of the Rubicon is in the past.”

- What’s the truthmaker of the A-statement? Tensed A-fact that Caesar’s crossing of the Rubicon took place in the past?
- If truthmakers of A-statements are tensed A-facts, then we live in an A-world.
- Question: how can a B-theorist react?

Russell's old tenseless theory

Thesis (Russell (1915))

"A-statements do not require A-facts as truthmakers because they are equivalent in meaning to B-statements." (Dainton, 32)

- non-starter: A-statements cannot be translated into B-statements without loss of meaning
- this can be seen most clearly in fact that A-statements have time-varying truth-values, whereas B-statements have time-invariant truth-values

New tenseless theory

Jack Smart, "Time and becoming" (1980); Hugh Mellor, *Real Time*, (I: 1981, II: 1998).

- A-statements, though inequivalent to B-statements, have B-truthmakers

Definition (Type-token distinction)

A type is a category of being, while a particular instance of a type is a token. E.g., "Socrates" is a token of the type "human being". In general, types have many tokens and particular individuals are tokens of many types.

- type: proposition; token: particular statement of proposition
- restate the problem: a given A-statement type, i.e. an A-proposition, has different truth-values at different times, s.t. no A-proposition can have a single B-truthmaker

- idea: if we manage to assign a B-truthmaker to each *token* of each A-proposition, then the problem is solved without recourse to A-truthmakers
- i.o.w.: the truth or falsity of an A-proposition is exhaustively determined by truth or falsity of all its (temporal) tokens
- this can be fully done in B-terms, using various strategies such as the
- *token-reflexive account*: for every A-proposition about any event, any of its token is true *iff* the token is as much earlier or later than the event as the proposition claims the present is than the event (cf. Dainton, 33)
- right-hand side of *iff* is purely in B-terms

- worse, the following **A-paradox** emerges: if on a particular day I falsely claim that Jim races tomorrow, then this claim shouldn't change its truth-value when a month later, Jim in fact does race tomorrow; but this happens if A-statements have A-truthmakers (such as "Jim races tomorrow" is true *iff* Jim races tomorrow)

Prior's "Thank goodness that's over"

- How much would you pay to relieve you from present pain? From future pain? From past pain?
 - Lucretius: why are we concerned with our future-finite existence, but not with our past-finite one?
 - Prior (1959): after a fierce headache, we exclaim: "Thank goodness that's over!" What are we expressing relief about?
 - it seems as if we're thanking goodness for a *tensed* fact, something that wasn't a fact until the headache subsided
- ⇒ Prior: there must be A-factss

Comments:

- 1 Perhaps this asymmetry, although it exists and requires an explanation (e.g. natural selection), may not need a *justification*.
- 2 Unclear whether A-theory can really deal with problem; cf. Parfit's "past and future suffering of those we love" case.

B-theory of change

- roughly: an object changes by virtue of having different properties at different times
- objection (e.g. by McTaggart): poker's being hot at t_1 and being cold at t_2 doesn't amount to change, since these facts are timelessly true
- common distinction bw objects (bicycle) and events (French Revolution): objects have spatial parts, but no temporal parts, while events typically have both
- presumes an endurantist view (cf. last lecture)

Mellor's detensed endurantism

- Mellor: only a single persisting object can undergo change, but events cannot
 - two different temporal parts possessing different properties does not amount to change, but only to sth akin to spatial variation
 - change: numerically identical entities (whole objects) possessing different properties
 - (spatial) variation: numerically distinct entities (parts) possessing different properties
 - for Mellor, as for all endurantists, time and space are very different animals
 - not so for perdurantists: objects have temporal parts just as they have spatial ones (bicycle-today, bicycle-tomorrow, etc)
- ⇒ for perdurantist, difference bw change and spatial variation may evaporate

Addendum: Emergent time in quantum gravity

- even for perdurantist, change may still be different from spatial variation, just bc time and space remain different
 - in quantum gravity: time may disappear as fundamental magnitude (Rovelli)
- ⇒ time might be emergent on higher level of reality