

The B-theory: time as a fourth dimension

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0. 'According to the A-theory, the present is "special"'—a clarification

Part I: B-theoretic responses to some standard objections

1. The modal objection to the B-theory

'Possibly: it is raining in Pennsylvania now but it is not the case that it is raining in Pennsylvania simultaneously with this utterance' is true (since *this very utterance* could have been made at a different time).

'Possibly: it is raining in Pennsylvania now but it is not the case that it is raining in Pennsylvania now' is false.

Therefore, 'It is raining in Pennsylvania now' is not synonymous with 'It is raining in Pennsylvania simultaneously with this utterance'

Therefore, A-facts do not all reduce to B-facts

2. B-theorists' response to the modal objection

The final step fails. Indexical terms are not *synonymous* with descriptions that bring in utterance.

Compare:

'Possibly: it is raining here but it is not the case that it is raining in the same place as this utterance' is true (since *this very utterance* could have been made at a different place).

'Possibly: it is raining here but it is not the case that it is raining here' is false.

Therefore, 'It is raining here' is not synonymous with 'It is raining in the same place as this utterance'

Therefore, 'here'-facts do not all reduce to facts statable from the 'placeless perspective'.

3. The knowledge objection to the B-theory

One could, in principle, know all the B-facts about the world without knowing *which time is present*.

Therefore, there is a fact about which time is present over and above all the B-facts.

4. Response to the knowledge objection

Compare the previous argument to this:

One could, in principle, know all the facts about the world without knowing *where one is*. (Example of Lingens in the library)

Therefore, there is a fact about where one is over and above all facts from the 'placeless perspective'.

Moral: there is *irreducibly self-locating belief* (and knowledge). To describe a person's beliefs/knowledge, it is not enough to fully specify how they take the world as a whole to be: you also have to specify who/where/when they take *themselves* to be.

Part II: Time as a dimension

5. **Representing time in space: timelines**
6. **Representing time and one or two dimensions of space in space: spacetime diagrams**
7. **Points of space and instants of time versus points of spacetime**
8. **Spacetime structure**
9. **The relationalist alternative to substantivalism**