

## The Beginning and End of Time

Does the beginning and end of the universe imply the beginning and end of time itself?

### Arguments that time had no beginning

#### From the nature of beginning

Events have beginnings and endings in time. A beginning implies a change. If Bob begins to exist, then there was a time when he did not exist and a later time when he did exist. So a beginning to time suggests that time changed from not-existing to existing.

#### From the first moment

It seems that time has a beginning if there was a first moment, or, if the past is finite in extent.

- P1. Every moment is (at some time) present.
- P2. The present is the boundary between past and future.
- P3. If there was a first moment of time, it could not have been present - because there can be no past at the beginning of time (from P2).
- P4. There was no first moment of time (from P1 & P3).
- P5. Time has no beginning (from P4).

### PSR

*The Principle of Sufficient Reason* (PSR) requires that every state of the universe has an antecedent cause that explains it. Hence, the universe and time should have no beginning.

- 1. Flesh out the argument.
- 2. Possible rebuttals?

### Time cannot have a beginning

- P1. If time had no beginning, then an infinite amount of time has already passed.
- P2. If an infinite amount of time has passed, then it is possible for an infinite series to be completed,

P3. It is not possible for an infinite series to be completed.

P4. An infinite amount of time has not passed (from P1–P3).

C. Time had a beginning.

- Can an infinite series have no beginning or last member?
- Suppose that time is an infinite series with no first member. Then there must be some series of states that has no beginning. The causal explanation goes on forever.

## A Dilemma

- If time has a beginning, but no end, then there is an uncaused event, namely, the beginning of the universe.
- If time does not have a beginning, then the past extends indefinitely and there is no finite explanation of the existence of any stage in the universe's history.