

Metaphysics

The nature of time

Chapman University. PHIL305. Lecture 15. 3/29/2022.
Kelvin McQueen

Discussion board (w8) posts due 4/2

- ▶ **Post 1:** What is the most plausible presentist response to the argument from Special Relativity? Does the response work? Be sure to single out a specific premise or inference step in this argument. 200-300 words.
- ▶ **Post 2:** Provide constructive feedback to a post on another student's thread. 150-250 words.

Assignment Rubric Details

Discussion Board Posts				
Criteria	Ratings			Pts
Post 1 Response to prompt	5.0 pts Excellent The post clearly answers the prompt, demonstrates understanding of the reading, and illustrates independent thinking.	3.0 pts Adequate The post attempts to answer the prompt, demonstrates partial understanding of the reading, but lacks independent thinking.	1.0 pts Inadequate Does not provide clear answer to the prompt and does not demonstrate understanding of the reading.	5.0 pts
Post 2 Constructive feedback	5.0 pts Excellent The post responds clearly to another student's post, offers constructive ideas, and is respectful.	3.0 pts Adequate The post attempts to respond to another student's post, but lacks either constructive ideas or respectful language.	1.0 pts Inadequate Does not respond to another student's post in way that demonstrates thoughtfulness.	5.0 pts
Total Points: 10.0				

Can we define time?

- ▶ Time is what is read by a clock.
 - ▶ (Source: wikipedia.org/wiki/Time_in_physics)
- ▶ Time is the continued sequence of existence and events that occurs in an apparently irreversible succession from the past, through the present, into the future
 - ▶ (Source: wikipedia.org/wiki/Time)
- ▶ Time is nature's way to keep everything from happening all at once.
 - ▶ (Source: John Archibald Wheeler, 1990)
- ▶ Are these definitions *circular*?

Time's passage (the “ordinary conception”)

- ▶ *Future* events coming to be and becoming *present*, and those events that are present slipping into the *past*.
- ▶ Past events:
 - ▶ At one time they were present.
 - ▶ They no longer exist (though they once did exist).
 - ▶ The past is *closed* (i.e. which events are past are fixed).
- ▶ Present events:
 - ▶ They are happening *now* (simultaneously with the here and now).
 - ▶ They constitute reality (what exists).
- ▶ Future events:
 - ▶ They are not (yet) in existence.
 - ▶ The future is *open* (i.e. it is not fixed which events will come to be).

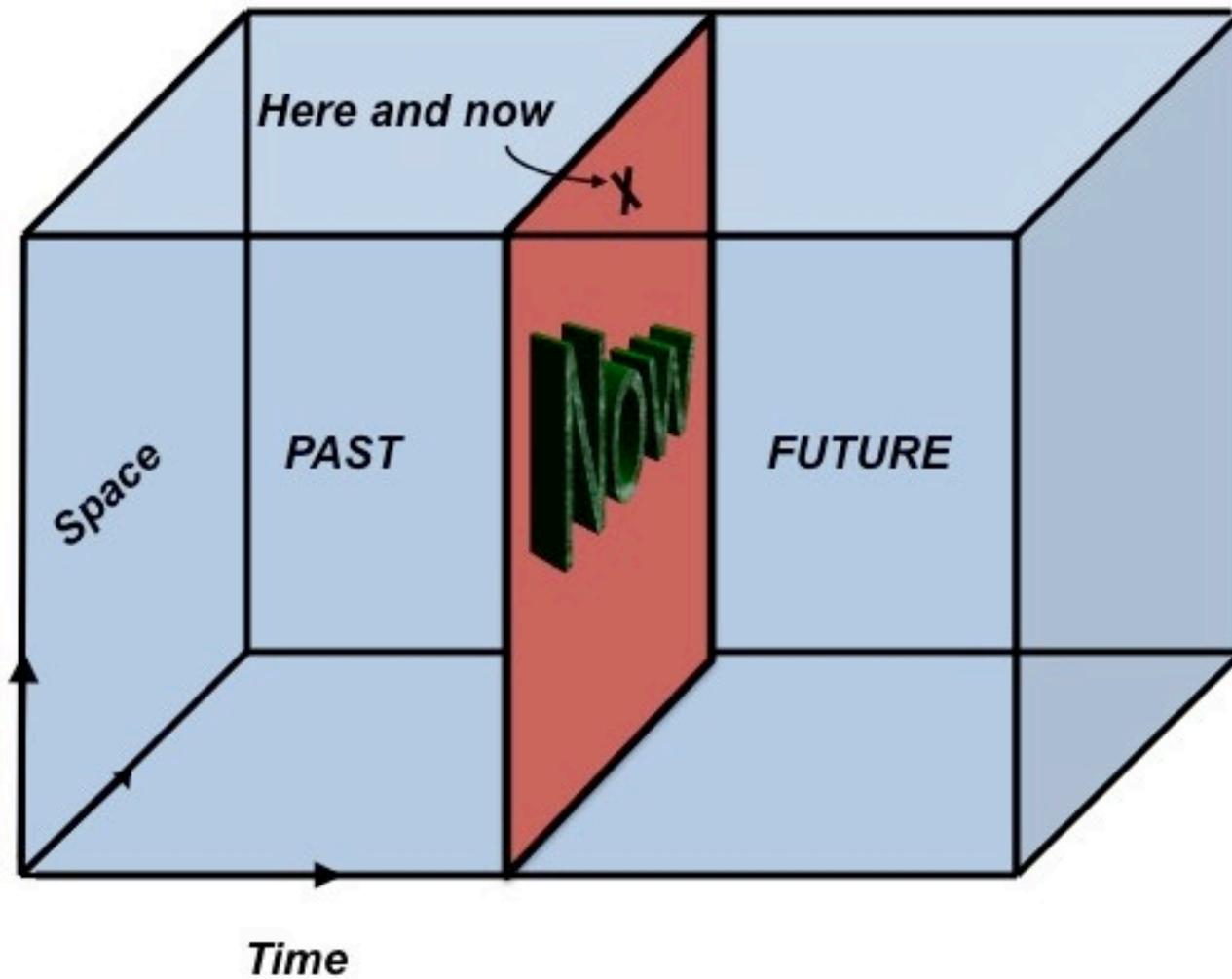
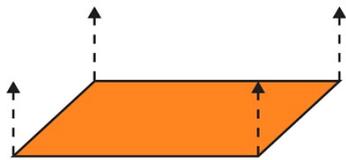


Table 5.1 Ontologies of Time: Which Objects and Events Exist?

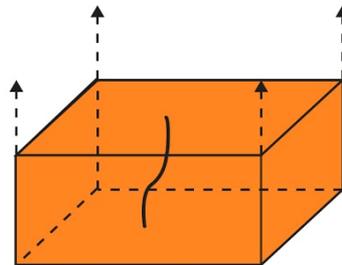
	<i>Past objects and events?</i>	<i>Present objects and events?</i>	<i>Future objects and events?</i>
Eternalism	Yes	Yes	Yes
Presentism	No	Yes	No
The growing block theory	Yes	Yes	No
The shrinking block theory	No	Yes	Yes

Presentism



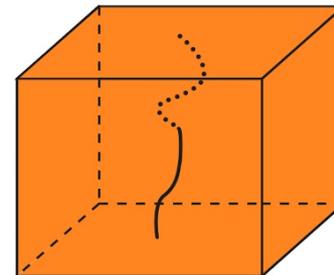
The Present

Growing Past



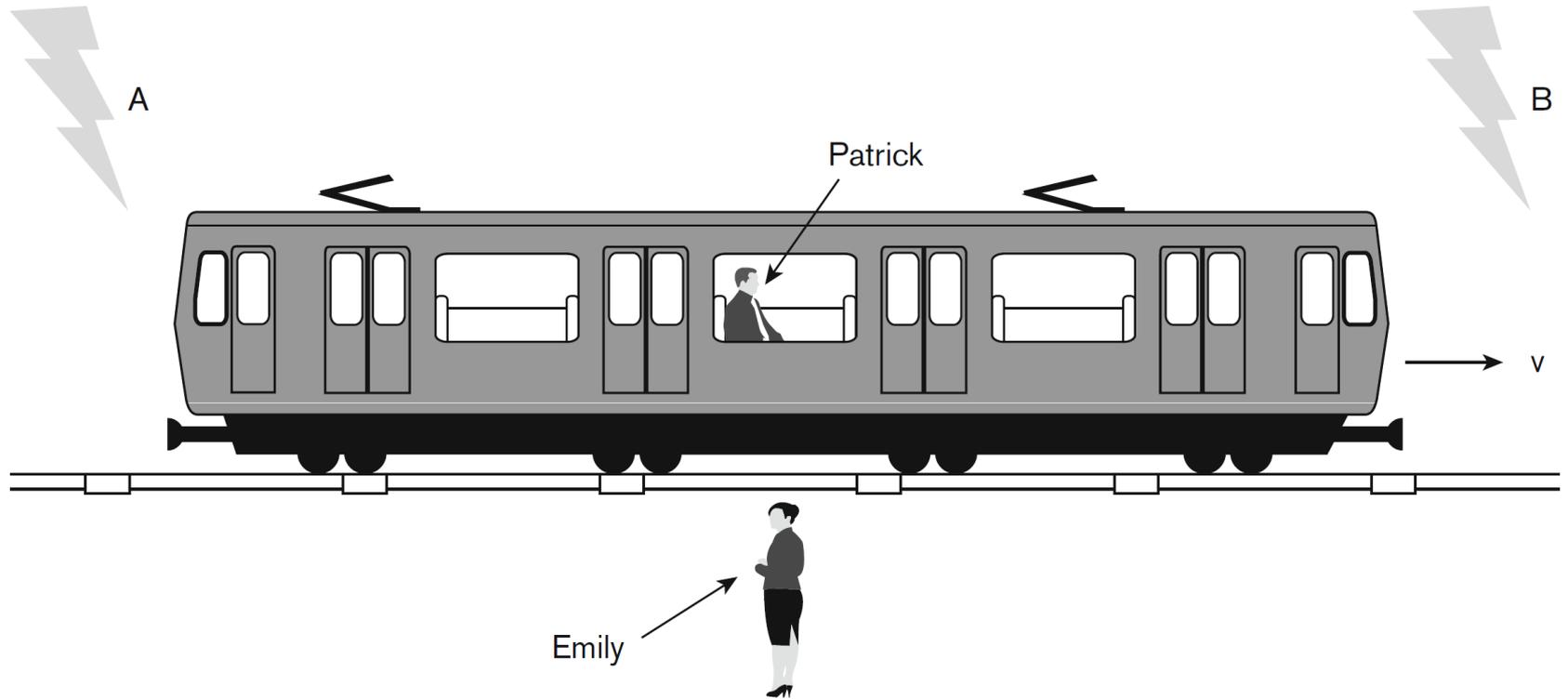
Past & Present

Eternalism



Past, Present, & Future

Einstein's train thought experiment



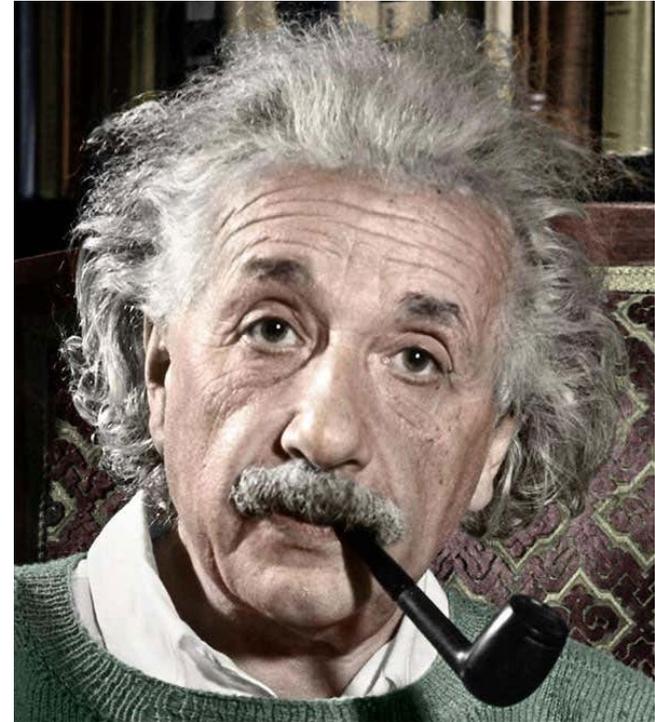
Emily: “A and B strike *simultaneously*”.

Patrick: “B strikes *first*, then A strikes”.

Einstein: who is right and who is wrong?

Einstein's train thought experiment

- ▶ Einstein argued that *there is no fact of the matter* as to who is right!
- ▶ Neither Patrick nor Emily are “at rest” in any objective sense.
- ▶ After all, Emily is moving (backwards) *relative to Patrick's frame of reference*.
- ▶ Einstein proceeded to develop the *Special Theory of Relativity* (1905), where *distant simultaneity* is not defined.
- ▶ If there is no *simultaneity between distant events*, then there is no *objective present*.



The argument from Special Relativity

- (1) If presentism is true, then which events exist depends on which are past, present, and future.
- (2) Which events are past, present, and future depends on which events are simultaneous with the here and now.
- (3) If Special Relativity is true, then this is a matter of perspective.
- (4) Special Relativity is true.
- (5) So, if presentism is true, then which events exist is a matter of perspective (from 1-4).
- (6) What exists is not a matter of one's perspective.
- (7) So, presentism is false (from 5&6).



Figure 5.2 Minkowski Space–Time and the Lightning Strikes

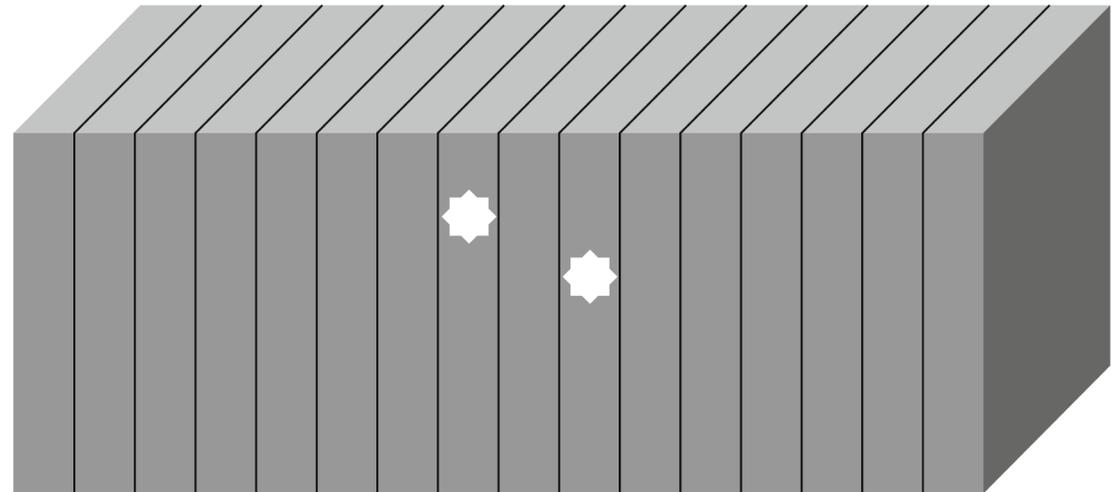
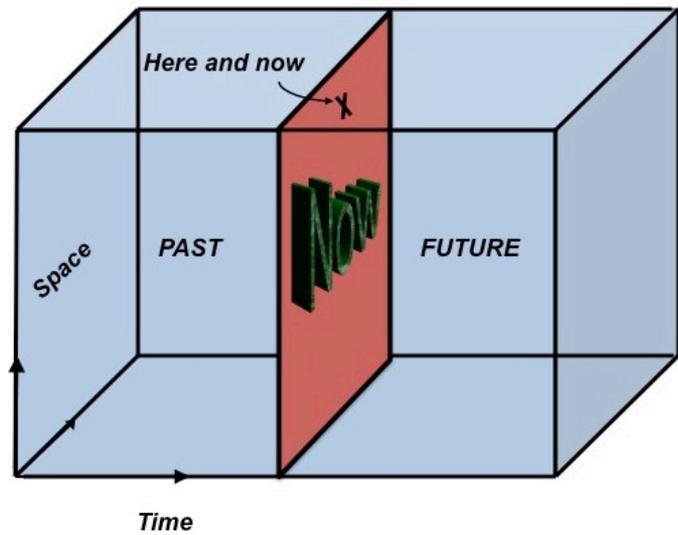


Figure 5.3 A Space–Time Containing Objective Facts about Which Events Are Simultaneous with Which