The Philosophy of Time
Lecture Two

Change and the A-Series

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Change and the A-Series

Two Time Series

- Last week we introduced McTaggart's argument for the unreality of time
- We began by distinguishing between two different time series
- **The A-Series**
  - Past — Present — Future
  - The Moon Landing is in the past, this lecture is in the present, and the Mars Landing is in the future
- **The B-Series**
  - Earlier — Later
  - The Moon Landing happened earlier than this lecture, which happened earlier than the Mars Landing

McTaggart's Argument for the Unreality of Time

- McTaggart's argument then has three premises:

  (1) The reality of time requires the reality of change
  (2) The reality of change requires the reality of the A-Series
  (3) But, the idea of a dynamic A-Series contains a contradiction, so there can be no real A-Series

Time without Change

- We focussed on premise (1)
  (1) The reality of time requires the reality of change
- We looked at Shoemaker's argument that time can pass without there being any changes
- While Shoemaker's argument was initially compelling, it turned out to be a bit more complicated than it looked
  - If the whole Universe freezes for a while, then what could cause the subsequent thaw?
- But more importantly, we saw that Shoemaker's argument didn't actually upset McTaggart's argument
  - All that McTaggart requires is that in a universe in which there is no change at all, there is not time at all

This Week

- This week, we're going to focus on premise (2):

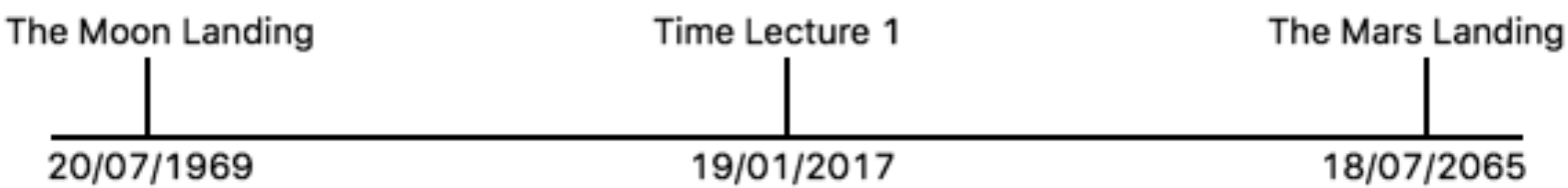
  (2) The reality of change requires the reality of the A-Series

- What are McTaggart's reasons for thinking this?
- Are they good reasons?
- What do modern philosophers have to say?

Change and the A-Series

The Static B-Series

- "Distinctions of [this] class are permanent" (McTaggart 1908: 458)
- If event x happened earlier than event y, then that has always been true, and will always be true
- It always has been true, and always will be true, that the Moon Landing happened earlier than the first Time lecture

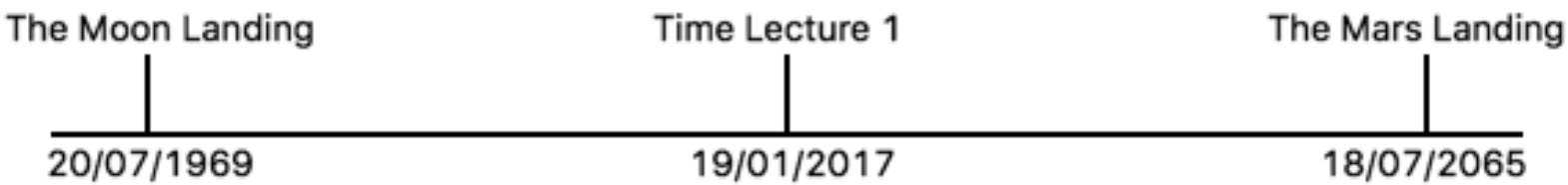


Nothing Changes on the B-Series

- McTaggart takes this to show that if the B-Series was all there was to time, then there would be no change
- Events do not come in or out of existence on the B-Series
  - events do not get added or removed from the B-Series
- Events do not change their temporal relations to each other on the B-Series
  - every event occupies exactly the same position on the B-Series forever
- Events do not change any of their intrinsic qualities on the B-Series
  - The Moon Landing is always exactly the same event, whenever we consider it: it is always Neil Armstrong, stepping onto the Moon, and messing up his line
- So what could possibly be changing on the B-Series?

The Dynamic A-Series

- But **if** we include the A-Series, then there **is** change
- The A-Series is **dynamic**: the distinctions of this class are **not** permanent
- The Moon Landing was once future, then it became present, and now it is past



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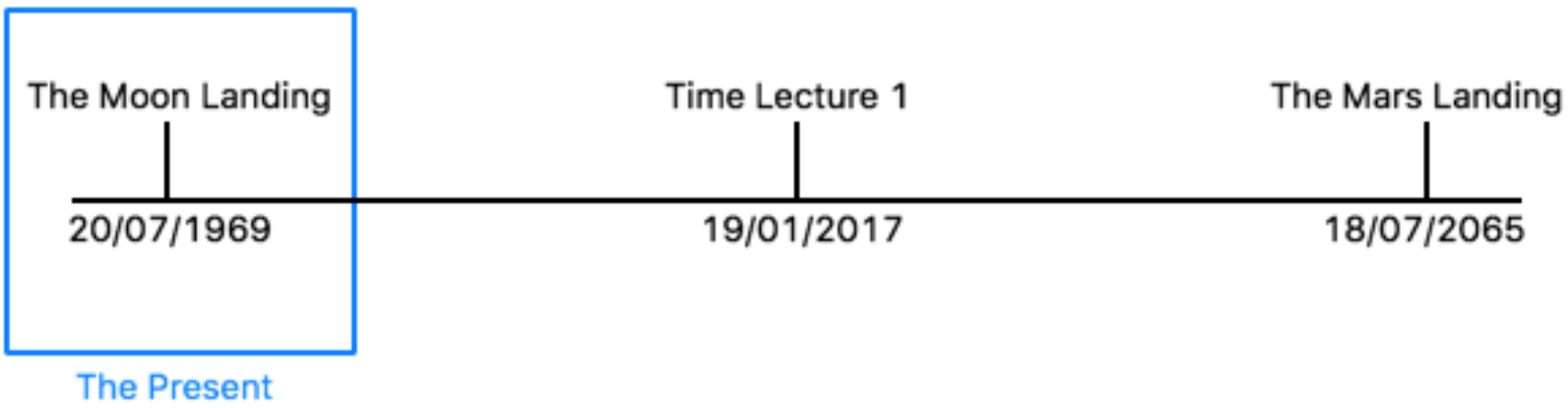

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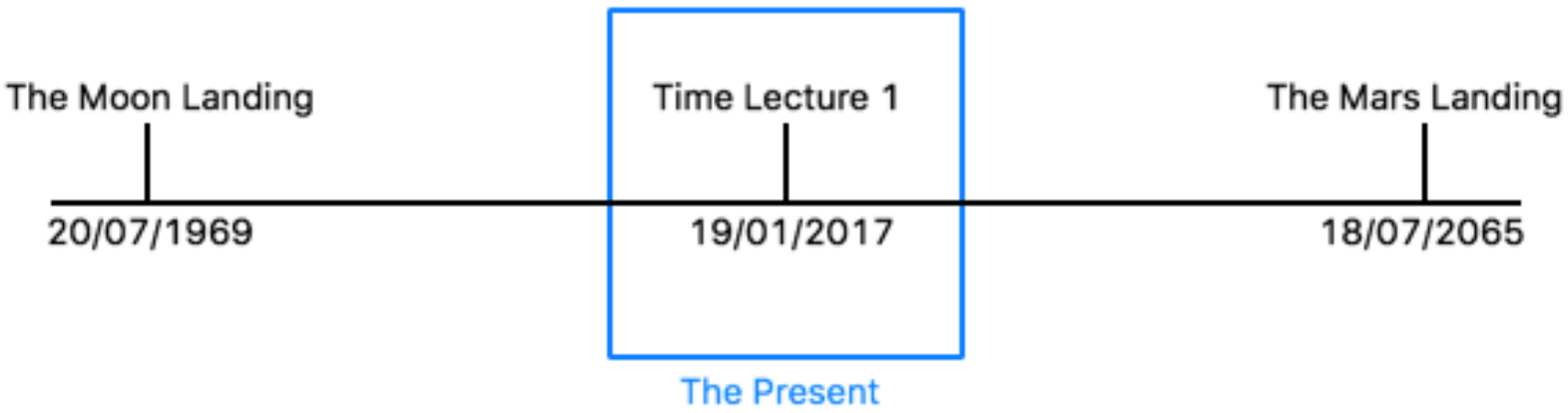

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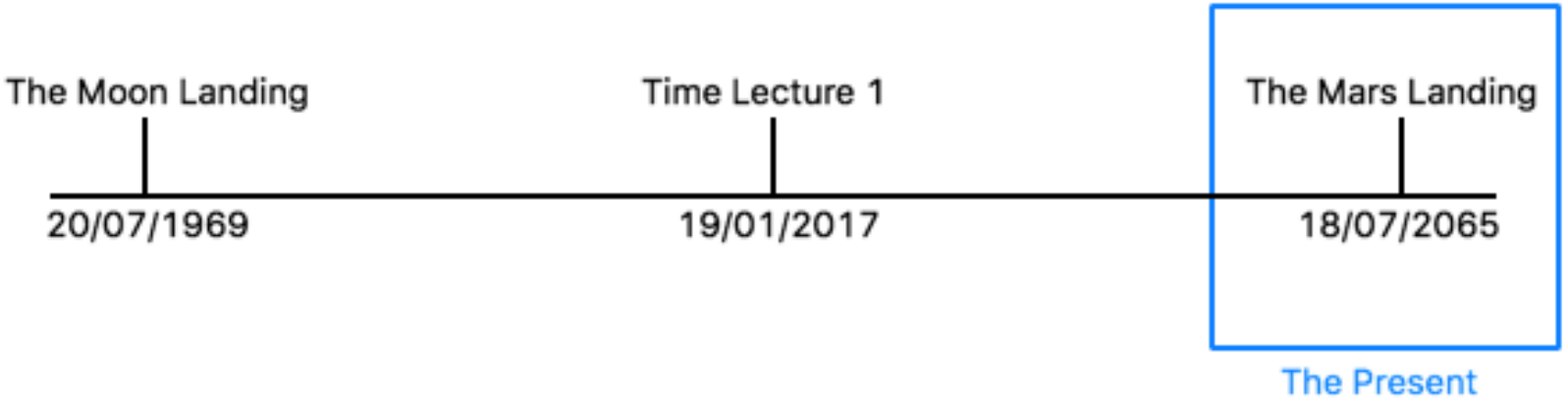


No Time without the A-Series

- This how McTaggart justifies premise (2):

  (2) The reality of change requires the reality of the A-Series

- McTaggart has already accepted premise (1):

  (1) The reality of time requires the reality of change

- And so he concludes that the reality of **time** requires the reality of the A-Series

No B-Series without the A-Series

- McTaggart goes even further, and claims that there could be no B-Series without the A-Series
  - The B-Series is plainly meant to be a **temporal** series: *earlier than* and *later than* are temporal relations
  - Without the A-Series, there is no time
  - So without the A-Series, there can be no B-Series
- Without the A-Series, we could still arrange "events" in a series, but this would not be the temporal B-Series
- It would just be an **atemporal** series of "events", which McTaggart calls the C-Series
- The B-Series = the A-Series + the C-Series

Change and the A-Series

Russellian Change

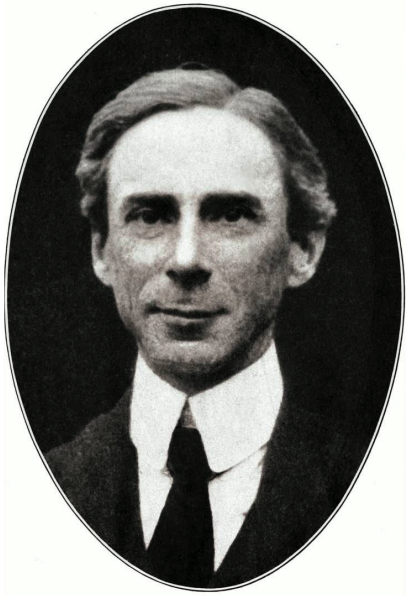
- Many philosophers have responded to McTaggart by objecting that he is simply working with the wrong **concept** of change
- Here is Russell, as quoted by McTaggart (1927: p. 14)

  Change is the difference, in respect of truth [...] between a proposition concerning an entity and the time T, and a proposition concerning the same entity and the time T^*, provided that these propositions differ only by the fact that T occurs in the one [and] T^* occurs in the other

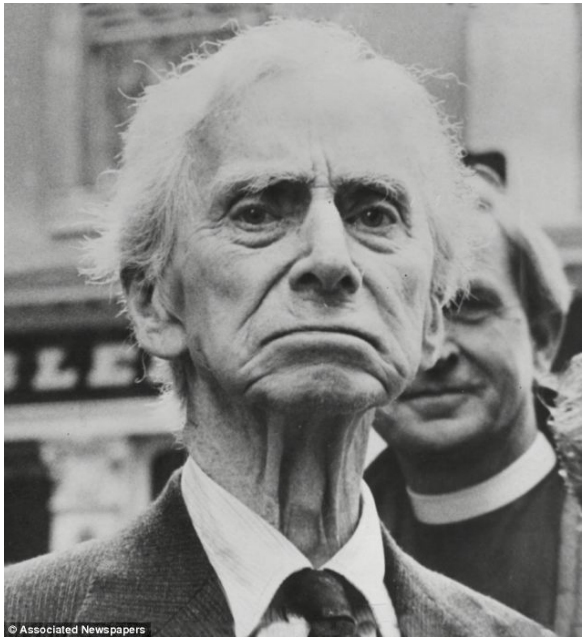
An Example of Russellian Change

(I) In 1900, Bertrand Russell does not look like a turtle

(II) In 1960, Bertrand Russell does not look like a turtle



Proposition I is true



Proposition II is false

McTaggart's First Reply

- McTaggart made a series of replies to the Russellian conception of change
- The first was to concede that Russell **has** described change, but still, without the A-Series, there could be no Russellian change
- That's because McTaggart has argued that without the A-Series, there is no time
- So **no** claim of the form '*a* is *F* at **time** *T*' is true
- And so we will never get a pair of claims like this where one is true and the other is false

- **Question:** How good is this first reply by itself?

McTaggart's Second Reply

- McTaggart points out that he and Russell are looking in different places for change:
- McTaggart is looking for changes in **events**
  - In the A-Series, **events** change from future, to present, to past
- Russell is looking for changes in **objects**
  - In our earlier example it is a particular object, Bertrand Russell, that changed from not looking like a turtle to looking like one

McTaggart's Second Reply

- Russell's way of thinking about change (**change in objects**) is surely more natural than McTaggart's (**change in events**)
- **BUT:** McTaggart points out that if we describe objects in B-Series terms, we will not see any changes:
  - (I) In 1900, Bertrand Russell does not look like a turtle
  - (II) In 1960, Bertrand Russell does look like a turtle
- These B-Series facts are unchanging: (I) and (II) **were always true**, and they **always will be**

McTaggart's Second Reply

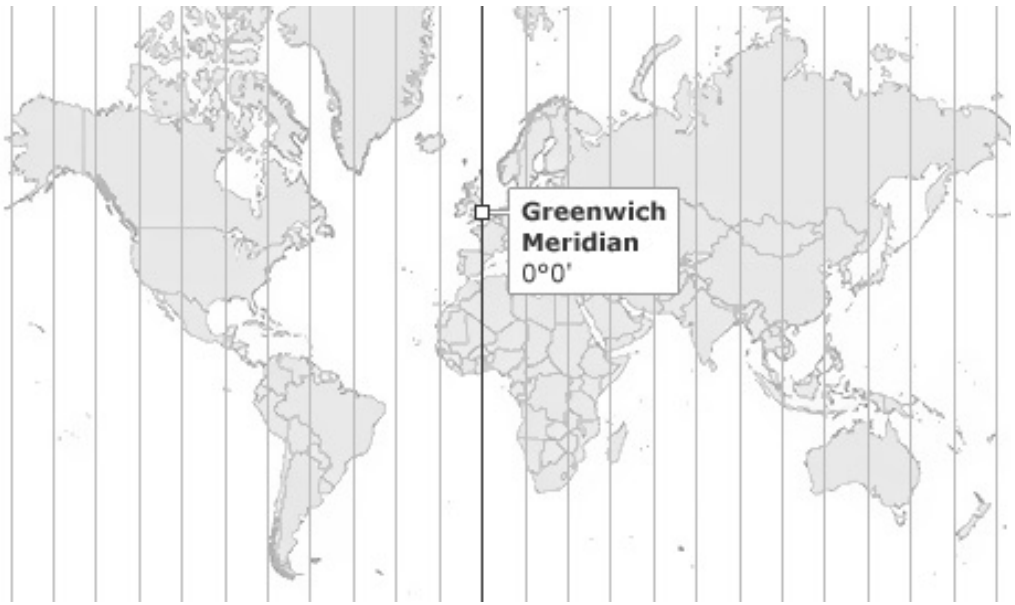
- However, if we re-introduce the A-Series, we can see change:
  - The reason that Russell changes is that the event of his looking like a turtle was in the future, but then it became present (and has since become past)
- So it is only by thinking of **events** as changing along the A-Series that we can think of **objects** as changing
- **Question:** How good is McTaggart's second reply?

McTaggart's Third Reply

- McTaggart points out that for all Russell has said so far, 'Russellian change' has not been shown to differ from mere variation in characteristics across **space**
- My right hand is cold, and my left hand is warm
- So one part of me has the property of being cold, and another part of me doesn't
- But it seems unnatural to say that I **change** because one part of me has a different property from another part of me

McTaggart's Third Reply

- McTaggart's example: part of the Meridian Line is in the UK, part of it is not



- It seems unnatural to say that this is a **change** in the Meridian Line

McTaggart's Third Reply

- McTaggart's point is that Russell has not done enough to explain how Russellian 'change' differs from mere variation of properties across space
- Of course, McTaggart thinks he knows what Russell would need to add to draw that distinction: the A-Series!
- To recall McTaggart's earlier points: without the A-Series, Russell does not have a temporal B-Series to work with, but only the atemporal C-Series

- **Question:** How good is McTaggart's third reply?

Change and the A-Series

McTaggart's Challenge

- Even if we are not yet convinced by everything McTaggart has said, we should accept that he has issued a good **challenge**
  - If we want time to be the dimension of change, then it is not enough **merely** to say that it arranges events into the order: earlier $\rightarrow$ later
  - If that's all we say, then we haven't done anything to distinguish changes through time from mere variations across space
  - **Something more** needs to be said about what makes time different from space
- In this part of the lecture, we will look at Mellor's attempt to say more without appealing to the A-Series

Events versus Things

- Mellor explains what he thinks makes time special in the Chapter 8, 'Change', of his 1998 book *Real Time II* (item 12 in the reading pack)
- Mellor's account begins with a metaphysical distinction between **events** and **things**

- **Events** are *things that happen*:
  - the Moon Landing; this lecture; your graduation from York...

- **Things** are just ordinary objects:
  - Your laptop; my chair; the Moon...

What's the Difference?

- Mellor thinks that the difference between events and things all comes down to the different kinds of parts they can have
- The ordinary notion of part we work with is the notion of **spatial parts** (parts in space)
  - The legs of my chair are **spatial parts** of the chair
- Things and events **both** have spatial parts:
  - The legs of my chair are spatial parts of my chair, and the surface of the Moon is a spatial part of the Moon Landing
- But Mellor thinks that events are special because they also have another kind of part: **temporal parts** (parts in time)

The Temporal Parts of Events

- This Lecture is an event which is spread out across time: it takes time to get from the beginning to the end
- We can divide this event up into temporal parts:
  - There was the first part, where we were recapping last week's lecture
  - There was another part, where we introduced McTaggart's views on change and the A-Series
  - There was another part, where we explained Russell's conception of change
  - ...
- The same goes for all other events: we can break them up into beginnings, middle and ends, and those are **temporal parts**

Things do not have Temporal Parts

- Mellor insists that things do not have temporal parts
- My laptop has many spatial parts, but no temporal ones
- My laptop does **persist** through time, but it doesn't do it in the same way as an event:
  - This lecture persists through time by having lots of different **temporal parts** spread out through time
  - My laptop persists through time by being **wholly present** at each moment it exists

This is a Controversial Distinction

- Pretty much everyone agrees with Mellor that events have temporal parts: that's just how everybody speaks in ordinary life
- But lots of people disagree with Mellor about things: lots of people think that things have temporal parts too
  - **Endurantism:** things persist by being wholly present at all the times they exist
  - **Perdurantism:** things persist by having temporal parts
  - Mellor is an endurantist, but there are perdurantists, like Lewis (see item 5 of the reading pack)

Mellor's Rejection of Perdurantism

- Why does Mellor reject perdurantism for ordinary things?
- According to Mellor, if *b* is a part of *a* (in the sense he cares about), then it must be possible for *b* to exist without *a*
- This works for ordinary spatial parts of things
  - the table legs could exist without the table
- It also works for the temporal parts of events
  - we could have stopped the lecture after the first half
- But it doesn't seem to work with temporal parts of ordinary things
  - Rob-today is not a real part of me because, according to Mellor, it could not exist if I did not exist

Mellor's View of Change

- An entity changes if it varies its properties across some dimension, **but the variation is not a matter of different parts having incompatible properties**: it must be **one and the same** entity having those incompatible properties
- An example of change:
  - In 1900 Russell (the man himself, **not one of his temporal parts**) does not look like a turtle
  - In 1960 Russell (the man himself, **not one of his temporal parts**) does look like a turtle
- An example of non-change:
  - One **part** of me is cold, my right hand
  - One **part** of me is warm, my left hand

Mellor's Difference between Time and Space

- Mellor uses his account of change to explain the difference between time and space
- Time is the dimension of change, space is not:
  - Whenever an entity varies its properties across a spatial dimension, it does so by having different spatial parts with different properties
  - But when a **thing** varies its properties across time, it does so by having different properties **as a whole** at different times
- So if Mellor's account of change is allowed to stand, then he has answered McTaggart's challenge

Change and the A-Series

A Contradiction?

- Imagine someone saying that Mellor's account of change leads to contradictions:
  - Russell, the very man himself, does not look like a turtle in 1900
  - Russell, the very man himself, does look like a turtle in 1960
  - So Russell both does and does not look like a turtle!
- I am sure that everyone thinks that this argument is silly, and it is
- The trouble is that it is not clear whether Mellor can explain **why** it is silly without giving up on his account of change

First Response: Temporal Parts

- One way of dealing with this problem is to posit temporal parts for things as well as events
  - Russell has temporal parts in 1900 which do not look like turtles, and temporal parts in 1960 which do
- But Mellor can't do that: his account of change relies on his rejection of the idea that things have temporal parts

Second response: Relational Properties

- Another way of dealing with this problem would be to say that *looks like a turtle* is not really a **property** of a thing, but a **relation** between a thing and a time:
  - Russell looks like a turtle at 1960 $\Rightarrow$ Russell bears the *looks like a turtle* relation to 1960
  - Russell does not look like a turtle at 1900 $\Rightarrow$ Russell does not bear the *looks like a turtle* relation to 1960

Second Response: Relational Properties

- The trouble with this suggestion is that we seem to have lost any sense in which Russell is **changing**:
  - Even in 1900, it was true that Russell bore the *looks like a turtle* relation to 1960
- Compare the following:
  - I bear the *taller than* relation to Tom Cruise
  - I bear the *shorten than* relation to Vince Vaughn
  - This surely does not amount to a change in me
  - But in that case, why does bearing the *looks like a turtle* relation to some times and not others amount to a change in Russell?
- Of course, we could re-introduce the sense of change by adding an A-Series of time, but Mellor is trying to avoid the A-Series!!!

Mellor's Response

- Mellor seems to think he can find a way out by saying that **events** are located at different times
  - *a* is *F* at *T* just in case the event of *a*'s being *F* is located at *T*
- But how exactly is that meant to help?
- As far as I can tell, we are still faced with exactly the same questions as before

An Objection

- We need some relation between an **event** and how the **things** in the event are. What is that relation?
- **Suggestion 1:** if the event of *a*'s being *F* is located at *T*, then *a* is *F*
  - That's no good: it leads to the contradiction!
- **Suggestion 2:** if the event of *a*'s being *F* is located at *T*, then the temporal part of *a* located at *T* is *F*
  - That's no good: Mellor is an endurantist about ordinary things, not a perdurantist
- **Suggestion 3:** if the event of *a*'s being *F* is located at *T*, then *a* bears the *being F* relation to *T*
  - That's no good: it seems to make change disappear

Change and the A-Series

Summary

- McTaggart's argument then has three premises:

  (1) The reality of time requires the reality of change
  (2) The reality of change requires the reality of the A-Series
  (3) But, the idea of a dynamic A-Series contains a contradiction, so there can be no real A-Series

- This week we focussed on (2)
- It is hard to say how good McTaggart's case for (2) is
- It's certainly got something to it, but maybe we could use something like Russell's or Mellor's view of change to reject it
  - or maybe there is another way to reject it altogether?
- You may find this uncertainty a depressing end to the lecture, but at least it gives you room to think through your own ideas on this topic!

For Next Week

- Read (or hopefully re-read) McTaggart 1927
- Read some or all of items 2–4 in the reading pack (i.e. Broad 1938, Dummet 1960, Mellor 1993)

- **Reminder:** we have our first seminars **tomorrow**. Please see the VLE for information about how to prepare for your seminar