Space, Time and Causality: Time, I

Time is Not Real
Just to be clear ...

McTaggart thinks that time is *not real*
Two Ways of Thinking About Time

• ‘A Series’ – Events and/or times ordered in terms of past, present and future

• ‘B Series’ – Events and/or times ordered in terms of earlier than/later than
McTaggart’s Argument

(1) If the A-series is not real, time is not real
   (a) If the A-series is not real, change is not real
   (b) If change is not real, time is not real

(2) The A-series is not real

(3) Time is not real
The Case for (1b):
The Need for Change

• Change seems essential to the passage of time

• *Imagining* a changeless world may merely import temporality by importing us as observers
The Case for (1a):
The Need for the A-Series

- Events start off being future, become present, end up past
- B-series relations do not change
  - e.g. WWII comes just less than 21 years after the end of WWI
The Case for (2):
The Unreality of the A-Series

• If a description contains a contradiction, what it characterizes cannot exist

• McT argues that the very idea of the A-series contains a contradiction (the description of things we generate from the idea of the A-series is contradictory) ...
The Contradiction in the A-Series

(I) Being Past, Being Present and Being Future are incompatible properties

(II) The reality of the A-series requires that events have all three — each event will be future, present, and past

The A-series being real would require the truth of a contradiction

Contradictions cannot be true

So, the A-series is not real
McTaggart’s Argument

(1) If the A-series is not real, time is not real
   (a) If the A-series is not real, change is not real
   (b) If change is not real, time is not real

(2) The A-series is not real

(3) Time is not real
What to Do?

• McTaggart’s conclusion seems unacceptable

• His argument is valid — if the premisses were true, the conclusion would be true

• So — Can we object to any of the premisses?
Objecting to (1a)

- Look at *objects*, not events
- Events don’t change — they are changes
- There is change where an object has a property at a time, and an incompatible property at another time …
Russellian Change

Definition of Russellian Change:

An object, $b$, changes if and only if $b$ exists at $t$ and is $F$, and $b$ exists at $t^*$ and is not $F$, and $t \neq t^*$
Change without the A-Series?

• We can say that there is (Russellian) change without reference to the A-series

• But have we merely helped ourselves to time in order to reject an argument against it’s existence? (For you to think about)

• Is Russellian change really change? ...
Real Change?

• Russellian ‘change’ is merely variation in properties along a dimension

• But objects vary in properties along other (spatial) dimensions ...

• Is that change? We don’t think so
Responses to the ‘Not Real Change’ Charge, I

• Accept/rule that all variation in properties across dimensions is change?

• If not, why not?

  (For you to think about. Hints: explanation; timeless/changeless worlds—what might they be like?)
Responses to the ‘Not Real Change’ Charge, II

Response: ‘Change is variation across the temporal dimension’

Counter: ‘Which is the temporal dimension?’

Response: ‘The temporal dimension is the dimension of change’

Counter: ???!
Responses to the ‘Not Real Change’ Charge, III

• Find another way to distinguish the temporal dimension ...

• One possibility: How do objects vary in properties across space? Is that how they vary across time?

• Another: Argue that time is the dimension of *causation* (See Mellor, *Real Time II*, Ch. 10)
Objecting to (1b): Time without Change?

- Shoemaker’s World (Universe):
  - Zone A – ‘Freezes’ every 3\(^{rd}\) year
  - Zone B – ‘Freezes’ every 4\(^{th}\) year
  - Zone C – ‘Freezes’ every 5\(^{th}\) year

- It seems the residents will hypothesize that every 60 years there is a world-(i.e. universe-)wide freeze
What Does Shoemaker Show?

• Does Shoemaker show that time without change is a genuine possibility?

• What are we to say about the causes of the ‘unfreezes’, or the first events coming after the world-wide freezes?
Before we go on ...

• Even if McTaggart’s argument fails, because (1) is false, his argument for (2) may tell us something interesting and important about the nature of time:

The Present (‘our’ present/the current moment) is not ontologically privileged

All times are equally real
Objecting to (2)

• The ‘Obvious Response’:

‘There is no contradiction inherent in the reality of the A-series, because no event is past, present, and future at the same time’
Taking Things Slowly

Pe: e is past   Ne: e is present   Fe: e is future

(I) If Pe, then not Ne and not Fe
    If Ne, then not Pe and not Fe
    If Fe, then not Pe and not Ne

(II) For any event e, Pe and Ne and Fe
The Obvious Response Again

• Take some sample e (e.g. your reading this), we can say (now):

  PFe      NNe      FPe

• Does that dispose of the contradiction?
The Not-So-Obvious Rebuttal

• We now have 9 temporal ‘determinations’ of events:

  PPe, PNe, PFe, NPe, NNe, NFe, FPe, FNe, FFe

• For the A-series to be real, each event must have all of these, but e.g. NNe and PPe are incompatible ...
Metaphysical Ping-Pong

McT: There’s a contradiction!

A-Theorist: I can fix it!

McT: There’s another contradiction!

A-Theorist: I can fix that too!

McT: ... [and so on]
Language and the World

‘I don’t deny that there are genuine metaphysical problems, but I think you have to talk about grammar ... in order to solve most of them.’

(Prior, ‘Changes in Events and Changes in Things’)
Language and the World

• To get clear about the problem, we need to understand what we’re saying about time:
  – Understand what we are taking the nature of the reality to be
  – Understand how the language we are using works (how it relates to that reality)
Understanding What We’re Saying: An Example

Pe: e is past  Ne: e is present  Fe: e is future

• What does ‘PFe’ say?

• What slots into ‘P_’, in the place of ‘e’ needs to be a noun phrase denoting an event (e.g. ‘the assassination of JFK’, ‘this lecture’)

• But ‘Fe’ is a sentence

• So, ‘PFe’ seems to be ‘This lecture is future is past’ ????

• ... which looks like ungrammatical nonsense
One Alternative Reading

• ‘P’, ‘N’, and ‘F’ as we understood them are predicates of events

• Can we understand ‘PFe’ so ‘P’ is a predicate of an event? Perhaps ...

PFe: (The event of) the being future of e is past

• But now it looks like the A-theorist hasn’t escaped contradiction at all! (Why?)
Another Try

• Perhaps we shouldn’t try to understand ‘P’ in ‘PFe’ as a predicate of an event at all

• An alternative: (sentence) operators
  – e.g. ‘It is not the case that’, ‘It is possible that’
Temporal Sentence Operators

• PNe = In the past: this lecture is present

• Now we have 2 types of expression with which to talk about time: predicates of events (‘is present’), and temporal sentence operators (‘In the past, ‘In the present’, ‘In the future’)

• To be clear, use different notation:
  – Predicates: Pe, Ne, Fe
  – Operators: P:Ne, N:Ne, F:Ne
Where’s the Tension Gone?

• In the middle of your reading this, *all* of the following are true:
  – In the past: your reading is occurring
  – In the present: your reading is occurring
  – In the future: your reading is occurring
Predicates Again

Pe iff e was occurring and is not (now) occurring

Ne iff e is (now) occurring

Fe iff e will be occurring and is not (now) occurring

• Ne is incompatible with Pe
• Ne is incompatible with Fe
McT: For each event, Pe, Ne, and Fe

A-Theorist: No—not at the same time, anyway. P:Fe, N:Ne, and F:Pe (for example)

McT: But for the A-series to be real, all of those determinations have to be true of each event, including, for instance N:Ne and F:Fe ...

A-Theorist (knuckles white, through gritted teeth): Noooo! Not at the same time! P:N:Fe, N:N:Ne, F:N:Pe ...
One Way for the McTer to Argue

• It *looks* like you can avoid contradiction, with regard to a (current) event, by saying N:Ne and P:N:Fe (so N:Ne and N:Fe don’t conflict), *but* ...

• What makes P:N:Fe true?

• It’s tempting to say: *at* some past time, *e* is future ...

  but *then* we seem to be back saying that *e* has the property of being future
Another Way for the McTer to Argue

• Expressions like ‘N:Nx’ and ‘N:Fx’ express properties of events

• But if that’s right, the A-theorist is in trouble, because ...

• The reality of the A-series demands that each event has all of them ...
Where to go from here?

How do we decide on whether the A-series is real or not?

By an even more careful account of temporal reality and temporal language

For now, though, we need a break ...
David Kellogg Lewis
(b. 1941, d. 2001)
Aside: The Problem of Temporary Intrinsics

A related, but different, issue ...

How do objects have different properties at different times?

(NB: This is not about the A-series; though next week we’ll see that looking at it helps us in understanding some positions in the A-series debate.)
Objects Change

Lewis is straight at t (he’s standing up)

Lewis is bent at t* (he’s sitting down)

So what? What’s the problem?
3 Intuitions

• *Being straight* and *being bent (not-straight)* are incompatible properties

• Being straight is an *intrinsic* property—if Lewis is straight, this is a matter of how he is in himself, not in relation to another thing

• Objects *persist* (exist at more than one time), but *not by having temporal parts*
Temporal Parts

- Objects have different (incompatible) properties at different points in space by having different *spatial parts* at the different points.

- We don’t think objects (human beings, tables, etc.) exist at different points in time by having temporal parts: it’s just *you* here now, as you were 5 mins ago.

  [We do seem to think some things (events) have temporal parts— ‘I saw part of the game (the 1st half)’]
The Problem

Lewis is straight at t

Lewis is bent (not-straight) at t*

So, at t, Lewis (not a part of Lewis) is straight (intrinsically), and, at t*, Lewis (not a part of Lewis) is not straight (intrinsically)

So, Lewis is straight and not straight (contradiction)
Three Solutions

• **Relationism** — straightness is not intrinsic, after all

• **Presentism** — only what is present exists

• **Temporal Parts Theory (TPT)** — objects do have temporal parts, after all
Relationism

Lewis stands in the is-straight-at relation to t

Lewis stands in the is-bent-at relation to t*

(Compare ‘Barry is delighted and revolted’ — Barry is delighted (by cheese) and revolted (by sausages))
Presentism

Everything is present

Nothing exists which is not present

(Lewis exists now, he is as he is (now), the past and the future do not exist, so there can’t be problems arising from how things are there)
Temporal Parts Theory (TPT)

The t-part of Lewis which exists at t is straight

The t-part of Lewis which exists at t* is bent

(Compare ‘The poker is hot and cold’ — The tip of the poker is hot, the handle is cold)
A Problem for Relationism

- The view makes Lewis a ‘shapeless blob’ — Lewis, the object, in himself lacks all of the properties he might have for only part of his existence
A Problem for Presentism

• Presentism says there are no times other than the present ...

‘No man, unless it be at the moment of his execution, believes that he has no future; still less does anyone believe that he has no past’ (Lewis, *On the Plurality of Worlds*, p. 204)
Two Problems for TPT

• TPT makes very odd sounding claims come out straightforwardly true — e.g. Nothing you can currently see (during the lecture) is identical with Barry

• Properties we thought were intrinsic come out as relational (Barry is straight at t in virtue of having a straight t-part)
Adverbialism: A Neglected Fourth Possible Solution?

Lewis is t-ly straight

Lewis is t*-ly bent

That is, Lewis is, in the t-manner, straight and Lewis is, in the t*-manner, bent

[See Sally Haslanger, ‘Endurance and Temporary Intrinsics’, *Analysis* 49, pp. 119–125. (Available as download.)]
What’s Meant to be Good About Adverbialism?

• Doesn’t have to deny the existence of the past or future

• Doesn’t have to understand apparent intrinsics as relations, so ...

• ... there isn’t a hidden third term — the object has the property directly, just in a particular way
Worries About Adverbialism

• Obscurity — How well do we understand adverbial modification?

• How is it meant to help? Adverbial modification doesn’t avoid contradiction here:
  – Barry is gracefully sitting
  – Barry is clumsily standing
Helping

• Some adverbial modification *does* make for contradiction-avoidance:
  – Barry is possibly sitting
  – Barry is actually standing

• *But*, how we are to understand claims about possibility is a difficult issue, so we may run into problems and/or have difficulty with obscurity
Evaluating Metaphysical Positions

• Standards of proof
  – Criminal — ‘beyond all reasonable doubt’
  – Civil — ‘on the balance of probabilities’

• You won’t always be able to achieve ‘criminal’ standards, so then you should apply ‘civil’

• Favour views which have the lowest costs and the highest plausibility ...

• ... and *explain* and *justify* your verdict
Next Time

• Return to the question of the reality of the A-series, and the nature of time and tense

• Look more closely at the range of temporal facts, and at the language we use to express them