

Wk1: INTRO TO THE COURSE & HERACLITUS

What is PHIL008: Study Skills?

This is explicitly a class for teaching a comprehensive set of skills that philosophy undergraduates need to develop. We'll be reading various texts, not just in order to learn *content* (which, this term, happens to be a brief introduction to the philosophy of time), but also in order to practice a range of essential philosophical *skills*, such as exegesis, reconstructing arguments, critical analysis and engagement, and essay writing (to name a few!)

Basic Requirements for Students:

Once enrolled, attendance in this module is compulsory and, as with other modules, less than 70% attendance is a reason for barring the students from assessment. I'll keep attendance records and notify the DO & DT once a student has missed two tutorials. A first absence should be preceded with an email in advance explaining why you'll be absent from class. Students are also obliged to do the assigned work, to turn up punctually, to participate in class and of course to write and submit the final assessed essay in order to get credit for the course.

Assignments:

- DO THE REQUIRED READING: Every week, we'll be reading a (required) primary text, and I'll sometimes recommend one or two additional (suggested) texts. These will be emailed to you in plenty of time before the seminar.
- In weeks 2-9 (so not the first or last week of term, or reading week) you will write a short (between 300-500 words) response to the piece based upon the themes and questions I'll indicate in that week's email. You must send me the response by email by 18:00 on Thursday, the night before the seminar.
- You can write a short (under 1,000 words) formative essay, due in on the Monday of week six.
- There'll be another opportunity to write a second formative essay (under 1,500 words), which will be due on the last day of term 1.
- You will write a summative essay (under 2,000 words) over the winter break, which will be due the first day of term 2.

N.B. You don't have to write both formatives, but you are required to write at least one and you are strongly encouraged to write both.

Course Structure:

Wk1: Ancient perspectives on time

Required reading: Heraclitus fragments {4 pages}

Wk2: Early and Modern approaches to thinking about the passage of time

Required reading: Smart, J. J. C. (1949) "The River of Time", *Mind*, New Series, Vol. 58, No. 232, pp. 483-494 {13 pages}

Wk3: Anti-realism about time

Required reading: McTaggart, J. Ellis, (1908) "The Unreality of Time", *Mind*, New Series, Vol. 17, No. 68, pp. 457-474 {19 pages}

Suggested reading: Thomson, Judith Jarvis (2001) "McTaggart on Time" *Philosophical Perspectives*, 2001, Vol. 15, Metaphysics, pp. 229-252 {24 pages}

Wk4: Realist responses

Required reading: Prior, A. (1996): "Two Essays on Temporal Realism", in J. Copeland (ed.), *Logic and Reality: Essays on the Legacy of Arthur Prior* (Oxford: Clarendon Press), pp. 43-51. {9 pages}

Suggested readings: Prior, A.N. (1959) "Thank Goodness That's Over", *Philosophy*, Vol. 34, No. 128, pp. 12-17 {7 pages}
Butterfield, J. (1984) "Prior's Conception of Time", *Proceedings of the Aristotelian Society*, Vol. 84, pp. 193-209 {18 pages}

Wk5: Science fiction?

Required reading: Lewis, David K. (1976) "The Paradoxes of Time Travel", *American Philosophical Quarterly*, Vol. 13, No. 2, pp. 145-152 {7 pages}

Suggested reading: Sider, T. (2002) "Time Travel, Coincidences and Counterfactuals" *Philosophical Studies*, Vol. 110, pp. 115-138 {24 pages}

Wk6: The problem of change 1: Eternalist perdurantism

Required reading: Lewis, David, (1986) *On The Plurality Of Worlds*, pg 202-4 210 {4 pages}

Suggested reading: Haslanger, Sally (1989) "Endurance and Temporary Intrinsics", *Analysis*, Vol. 49, No. 3, pp. 119-125 {7 pages}

Wk7: The problem of change 2: Presentist endurantism

Required reading: Hinchliff, Mark (1996) "The Puzzle of Change", *Philosophical Perspectives* 10, pp. 119-136 {19 pages}

Suggested reading: Felletti, Flavia (2017) "Is Endurantism Really More Plausible Than Perdurantism From A Common-sense Perspective?", *Praxis Filosófica*, no. 45, pp. 77-99 {23 pages}

Wk8: The problem of change 3: Eternalist endurantism

Required reading: Parsons, Josh (2000) "Must a Four-dimensionalist Believe in Temporal Parts?", *The Monist*, Vol. 83, No. 3, pp. 399-418 {20 pages}

Wk9: Stage theory: a secret, third option

Required reading: Sider, T. (1996) "All the World's a Stage", *Australian Journal of Philosophy*, Vol. 74, pp. 433-453 {23 pages}

Discussion:

1. What are the significant themes in Heraclitus' work?

Some traditional categories: Fire, Flux, Opposites, Logos, Cosmos, Humans

N.B. Every ordering of the fragments itself is an interpretation of Heraclitus, or the beginning of an interpretation. There is more than one way to skin a cat here, and every taxonomy will have its pros/ cons!

2. What is the picture of Heraclitus' philosophy that can be assembled from these fragments?

3. Are there fragments that seem to contradict each other?

4. If so, what can I infer from these contradictions?

5. What was your personal reaction to the task of reading the fragments?

N.B. Heraclitus is notorious for his "obscure" and distinctive style. Heraclitus' stylistic devices include metaphor, simile, aphorism, pun, word play, allusion, riddles, rhythm, and sound. Some readers suggest that Heraclitus' seemingly oracular sayings simply paper over his out-and-out contradictions. He's both loved and hated by readers:

- "Heraclitus was a great prose artist, one of the most powerful stylists not only of Greek antiquity but of world literature" - Charles Kahn, *The Art and Thought of Heraclitus*, p. ix
- "[Heraclitus is] fundamentally inconsistent." - Jonathan Barnes
- For a discussion of whether Barnes' charge can be answered, see Timm Triplett, "Barnes on Heraclitus and the Unity of Opposites," *Ancient Philosophy* 6, pp. 15-23.

Wk2: ANCIENT & CONTEMPORARY PERSPECTIVES ON TIME: HOW IS TIME LIKE A RIVER?

Subjective Vs Objective Views of Time

Newton: time flows at an even rate.

John Locke: defines duration as “fleeting extension”.

Frampton: distinguishes between ‘historic’ time and ‘ecstatic time’ which is not regular or regimented; it is the subjective quality of time experienced during sleep, reverie, and intense emotions like boredom or joy.

“Historic time is the time of mechanistic ritual, of routine, automatic as metabolism... [It is composed of] sequential, artificial, isometric modules which are related to one another in language, by the connective phrase: ‘and then.’” – (Frampton, 2015 “Incisions on History / Segments of Eternity,” *On the Camera Arts and Consecutive Matters: The Writings of Hollis Frampton*, 40)

Question: what is the tension captured in Frampton’s distinction between ‘historic’ and ‘ecstatic’ time? What is its philosophical significance?

A Time Outside of Time

Arthur Eddington: endorses an atemporal view of events

“Events do not happen; they are just there and we come across them. ‘The formality of taking place’ is merely the indication that the observer has on his voyage of exploration passed into the absolute future of the event in question.” – (Eddington, *Space, Time and Gravitation*, p. 51)

John William Dunne: advocates a view called ‘serialism’, which derives largely from this idea of the voyage through time. He wanted to answer the question of whether time consists of moments like yesterday, today and tomorrow, or if it is the travelling between such moments that we experience as the present moment. He first proposed two temporal dimensions, $t1$ and $t2$ in order to capture the distinction between ‘static’ moments and the ‘dynamic’ movement between them. The physical brain itself inhabits only $t1$, requiring a second-order level of consciousness to inhabit $t2$. However, this view is rife with philosophical issues and has never been taken seriously by metaphysicians or psychologists. Dunne proposed an even higher-order temporal level $t3$ in which a third-level observer could experience not just the mass of events in $t2$ but the passage of those experiences in $t2$, and so on in the infinite regress of time dimensions and observers which gives the theory its name.

N.B. This is an example of *regress* or *vicious circularity* – an (almost always fatal) philosophical flaw. However, the idea that there exists a second temporal dimension has stuck around. Here’s how Smart motivates it:

“If time is a flowing river we must think of events taking time to float down this stream, and if we say “*time has flown faster to-day than it flew yesterday*” we are saying that the stream flowed a greater distance to-day than it did in the same time yesterday. That is, we are postulating a second time-scale with respect to which the flow of events along the first time-dimension is measured. “*To-day*”, “*to-morrow*”, “*yesterday*”, become systematically ambiguous. They may represent positions in the first time-dimension, as in “*to-day I played cricket and to-morrow I shall do so again*”, or they may represent positions in the second time-dimension, as in “*to-day time flowed faster than it did yesterday*”. Nor will it help matters to say that time always flows at the same rate. Furthermore, just as we thought of the first time-dimension as a stream, so will we want to think of the second time-dimension as a stream also; now the speed of flow of the second stream is a rate of change with respect to a third time-dimension, and so we can go on indefinitely postulating fresh streams without being any better satisfied.” – (Smart, 1949, *The River of Time*, 484)

Supertime: sometimes it is posited that time flows at a rate of one second of time per second of ‘supertime’, a higher-order dimension of time. Skow uses it as a fictional device to explain his ‘moving spotlight’ theory:

“Supertime is a dimension similar to time, but distinct and disconnected from it. Supertime provides a perspective on spacetime from which we can make sense of the motion of the NOW. From the perspective of each point of supertime, just one time is NOW. But from different perspectives in supertime, different

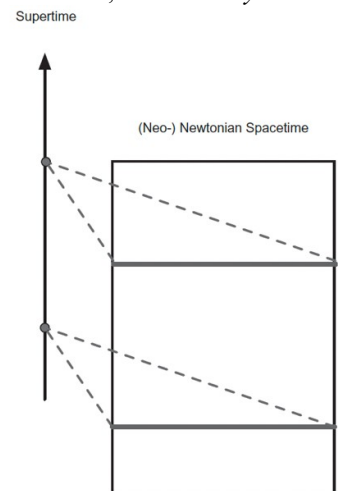


Figure 1

times are NOW. This is illustrated in Figure 1, [above] where the property of being NOW is represented by gray lines.” – (Skow, Bradford, 2009 *Relativity and the Moving Spotlight*. Journal of Philosophy 106, 12, 668-9)

Question: where does this temptation to posit a higher-order temporal dimension come from? Is it tenable?

The Two Senses of Battle

“There are certain differences between the use of “battle” in (1) “*The battle of Hastings occurred on 14th October, 1066*” and its use in (2) “*The battle of Hastings became fiercer*”. For although the two uses have many similarities, in its first use “battle” is analogous to “change from red to green of the light” and “victory” in a respect in which in its second use it is analogous rather to “traffic light”, i.e., in the second sort of context “battle” takes on some of the properties of a substance word... Let us now, for our present purposes only, classify together such expressions as the following: “change” and “becoming” (as in the traffic light example), “victory”, “arrival”, “co- incidence of the star with the cross-wire”, “impact”, “starting”, “stopping”, and so on, and “battle” in use (1) though not in use (2). These all show the same logical property of not ordinarily being able to be used in conjunction with the verb “to change”. – (Smart, 1949, *The River of Time*, 489-490)

Questions: what does this distinction between the two senses of ‘battle’ track? How is this related to Smart’s claim that events can’t change? Is this claim tenable? How does Smart motivate it?

Tense

“When we say that the boat “*was upstream, is level, will be downstream*” we are saying that occasions on which the boat is upstream are earlier than this utterance, that the occasion on which it is level is simultaneous with this utterance, and that occasions on which it is downstream are later than this utterance... In “*the boat’s being upstream is earlier than this utterance; the boat’s being level is simultaneous with this utterance; the boat’s being downstream is later than this utterance*” we have three occurrences of “*this utterance*” all pointing to the same utterance. On the other hand we cannot translate the statement, “*the beginning of the war was future, is present, will be past*” in the same way. If we try to do it we get: “*the beginning of the war is later than some utterance earlier than this one, is simultaneous with this utterance, and is earlier than some utterance later than this one*”. We can only put in a simple “*this utterance*” once. It was once true to say “*the beginning of the war is in the future*” or “*the beginning of the war is later than this utterance*” i.e. if a person were to have said it he would have turned out to be right. Later on it became true to say “*the beginning of the war is simultaneous with this utterance*.” Still later it becomes true to say “*the beginning of the war is earlier than this utterance*.” The three “*this*”s, however, point to different utterances. This shows how misleading it is to think of the pastness, presentness, and futurity of events as properties, even as relational properties. It shows how utterly unlike “*this event was future and became past*” is to “*the light was red and became green*”. – (Smart, 1949, *The River of Time*, 492-493)

Question: What does Smart think that pastness, presentness and futurity are and why does he think they are not “real” properties?

The River Metaphor

“It is suspected by even the least critical person that when we talk of time as a river which flows we are talking in a way which is somehow illegitimate. “*Time a river!*” we say to ourselves, “*a queer sort of river that. Of what sort of liquid does it consist? Is time a liquid? A very peculiar liquid indeed!*”. This, moreover, is only the be- ginning of our troubles.” – (Smart, 1949, *The River of Time*, 484)

“Suppose that there are two chess players who have very weak eyesight but very retentive memories. They can, we may suppose, tell quite easily what square a piece is on, and that, e.g., it has just moved diagonally, but cannot very easily distinguish its shape... Such players might get into the habit of very often identifying pieces solely by their previous moves.... Now suppose that the two players have been interrupted for a moment and that when they resume one takes the shadowy-looking thing, which is in reality one of his rooks, to be a bishop. He will then move it diagonally. The other player will say to himself “*that’s a bishop, for it came diagonally*”. The game may now proceed perfectly normally, though of course reference to a written record would bring to light a discontinuity, namely the metamorphosis of a rook into a bishop.” – (Smart, 1949, *The River of Time*, 493-4)

Questions: what are the pros and cons of thinking of time like a river? How far does the analogy extend? How useful is this method of explanation, anyway? What philosophical work does Smart’s analogy of the chess players do?

Wk3: REGRESS AND THE A SERIES: MCTAGGART'S TEMPORAL ANTIREALISM

Key:

A series: uses tensed predicates, like 'past', 'future', 'present', 'was', 'will be', 'is'.

B series: uses 'earlier than', 'later than' and 'simultaneous with'.

C series: lists events into a temporal ordering.

McTaggart's First Argument:

1. Time necessarily involves change. So if time is real, then change is real.
 2. There are three different ways that time could be: the A series, the B series, and the C series.
 3. Only the A series is compatible with genuine change, the B series and the C series can't properly explain change.
 4. The A series is untenable.
- C: Time isn't real

A SERIES

"Take any event-the death of Queen Anne, for example, and consider what change can take place in its characteristics. That it is a death, that it is the death of Anne Stuart, that it has such causes, that it has such effects - every characteristic of this sort never changes. "Before the stars saw one another plain" the event in question was a death of an English Queen. At the last moment of time - if time has a last moment - the event in question will still be a death of an English Queen. And in every respect but one it is equally devoid of change. But in one respect it does change. It began by being a future event. It became every moment an event in the nearer future. At last it was present. Then it became past, and will always remain so, though every moment it becomes further and further past." – (McTaggart, 1908, 460)

Questions: What kind of change does McTaggart draw our attention to here? Why is it important? Is this view compatible with Smart's view that events can't change?

B SERIES

"If a B series without an A series can constitute time, change must be possible without an A series. Let us suppose that the distinction of past, present and future does not apply to reality. Can change apply to reality? What is it that changes? Could we say that, in a time which formed a B series but not an A series, the change consisted in the fact that an event ceased to be an event, while another event began to be an event? If this were the case, we should certainly have got a change. But this is impossible. An event can never cease to be an event. It can never get out of any time series in which it once is. If *N* is ever earlier than *O* and later than *M*, it will always be, and has always been, earlier than *O* and later than *M*, since the relations of earlier and later are permanent. And as, by our present hypothesis, time is constituted by a B series alone, *N* will always have a position in a time series, and has always had one. That is, it will always be, and has always been, an event, and cannot begin or cease to be an event." – (McTaggart, 1908, 459)

Questions: Why does McTaggart reject 'becoming' as genuine change? Why can't the B-series support change? Why does McTaggart assume that the A series isn't real and try to prove that change is possible using only the B series?

C SERIES

"Events have an order. They are, let us say, in the order *M, N, O, P*. And they are therefore not in the order *M, O, N, P*, or *O, N, M, P*, or in any other possible order. But that they have this order no more implies that there is any change than the order of the letters of the alphabet, or of the Peers on the Parliament Roll, implies any change." – (McTaggart, 1908, 462)

Question: Why does McTaggart think that the C series is incompatible with change?

McTaggart's second argument:

1. The A series (pastness, presentness and futurity) is either a set of relations between, or a set of qualities of, events.
 2. Let's assume it's a set of relations. Let's look at one of those particular relations. If something is, say, past, it must be past with respect to *something*.
 3. This *something* must be something outside the time series, because the relation between two events in the time series (earlier than/ later than) never change, whereas an event *does* change from being future, to present to past.
 4. But there is nothing outside of the time series that an event can be past with respect to. Events can only be in the past or future of other events situated *inside* the time series.
 5. Furthermore, treating the A series as a set of relations leads to a vicious circle.
 6. So the A series is not a relation. Therefore, according to premise 1, the A series must be a quality of events.
 7. But McTaggart agrees with Smart (for much the same reasons) that pastness, presentness and futurity are not real qualities.
 8. Furthermore, treating the A series as a set of qualities also leads to the same vicious circle.
- C: The A series is untenable.

ANOTHER VICIOUS CIRCLE

McTaggart draws our attention to an incompatibility:

“Past, present, and future are incompatible determinations. Every event must be one or the other, but no event can be more than one. This is essential to the meaning of the terms. And, if it were not so, the A series would be insufficient to give us, in combination with the C series, the result of time. For time, as we have seen, involves change, and the only change we can get is from future to present, and from present to past. The characteristics, therefore, are incompatible. But every event has them all. If *M* is past, it has been present and future. If it is future, it will be present and past. If it is present, it has been future and will be past. Thus all the three incompatible terms are predicable of each event, which is obviously inconsistent with their being incompatible, and inconsistent with their producing change.” – (McTaggart, 1908, 468)

He then offers a hypothetical response on behalf of his opponent:

“It may seem that this can easily be explained... It is never true, the answer will run, that *M* is present, past and future. It is present, will be past, and has been future. Or it is past, and has been future and present, or again is future and will be present and past. The characteristics are only incompatible when they are simultaneous, and there is no contradiction to this in the fact that each term has all of them successively.” – (*ibid*)

Before arguing that this response is inadequate:

“But this explanation involves a vicious circle. For it assumes the existence of time in order to account for the way in which moments are past, present and future. Time then must be presupposed to account for the A series. But we have already seen that the A series has to be assumed in order to account for time. Accordingly the A series has to be presupposed in order to account for the A series.” – (*ibid*)

He later re-explains his regress argument (in terms reminiscent of the problems related to John William Dunne’s serialism and Bradford Skow’s supertime):

“The difficulty may be put in another way, in which the fallacy will exhibit itself rather as a vicious infinite series than as a vicious circle. If we avoid the incompatibility of the three characteristics by asserting that *M* is present, has been future, and will be past, we are constructing a second A series, within which the first falls, in the same way in which events fall within the first. It may be doubted whether any intelligible meaning can be given to the assertion that time is in time. But, in any case, the second A series will suffer from the same difficulty as the first, which can only be removed by placing it inside a third A series. The same principle will place the third inside a fourth, and so on without end. You can never get rid of the contradiction, for, by the act of removing it from what is to be explained, you produce it over again in the explanation.” – (McTaggart, 1908, 469)

He even considers the possibility that the circularity is *not* vicious:

“We must consider a possible objection. Our ground for rejecting time, it may be said, is that time cannot be explained without assuming time. But may this not prove - not that time is invalid, but rather that time is ultimate? It is impossible to explain, for example, goodness or truth unless by bringing in the term to be explained as part of the explanation, and we therefore reject the explanation as invalid. But we do not therefore reject the notion as erroneous, but accept it as something ultimate, which, while it does not admit of explanation, does not require it.” – (McTaggart, 1908, 470)

Before rejecting this response:

“An idea... cannot be valid of reality if its application to reality involves a contradiction. Now we began by pointing out that there was such a contradiction in the case of time - that the characteristics of the A series are mutually incompatible and yet all true of every term. Unless this contradiction is removed, the idea of time must be rejected. It was to remove this contradiction that the explanation was suggested that the characteristics belong to the terms successively. When this explanation failed as being circular, the contradiction remained unremoved, and the idea of time must be rejected, not because it cannot be explained, but because the contradiction cannot be removed.” – (McTaggart, 1908, 470)

Questions: What is the problem with the tensed predicates of the A theory? Can the regress be resisted? McTaggart holds that the contradictory nature of the A series remains, that the regress generated by those who would try to argue against it undermines their response that events can be past, present and future at different times. Do we agree? What does this tell us about the reality of time? McTaggart goes to great pains to show that the regress is insurmountable. What can we infer about philosophical regress arguments more generally? Is the A-theoretic regress as doomed as John William Dunne’s Serialism regress?

Wk4: PRIOR'S TEMPORAL REALISM

Prior's realist temporal metaphysics is based on two grounding principles.

1: The use of formal deduction (tense logic, in this case) to reach philosophical truth:

"Philosophy, including Logic, is not primarily about language, but about the real world. For example, the very simple logical truth that if John is sick then John is sick is not a truth about the sentence '*John is sick*' but a truth about John. It is not, of course, *peculiar* to John that if he is sick he is sick; it is true of *everyone* that if he is sick he is sick. Still it is true of John, and that is what the sentence says.

Formalism, i.e. the theory that Logic is just about symbols and not about things, is false. Nevertheless, it is important to 'formalise' as much as we can, i.e. to state truths about things in a rigorous language with a known and explicit structure. It is also necessary to pay attention to the structure of our language in order to expose and eliminate philosophical 'pseudo-problems', and in order to distinguish real objects from mere 'logical constructions'." – (Prior, 1996, 45)

"There are clear, hard structures for formal logicians to discover in the world of change and temporal succession. There are practical gains to be had from this study too, for example in the representation of time-delay in computer circuits, but the greatest gain that a logic of tenses brings is the accurate philosophical description of the reality of the passage of time." – (Prior, 1996, 46)

Questions:

- i) What are the advantages of using logic as a guide for philosophy?
- ii) Are there any drawbacks?

2: Prior takes intuition seriously. If something seems to exist according to our experiences and our common everyday discourse, our metaphysics should (at least try to) account for it, rather than claiming that it's somehow illusory:

a. The passage of time

"Propositions which are subject to tense-inflections, such as 'I am falling out of a boat', are liable to be true at one time and false at another. Certainly there are unchanging truths, but there are changing truths also." – (Prior, 1996, 46)

"All attempts to deny the reality of time founder, so far as I can see, on the problem of explaining the appearance of time's passage: for appearing is itself something that occurs in time. Eddington once said that events don't happen, we merely come across them; but what is coming across an event but a happening?" – (Prior, 1996, 47)

"We all know what it is to wait for something - an examination, for example; or coming home from the war; or Christmas. What we're waiting for begins by being future; it hasn't yet come to pass. Then a time comes when it does come to pass - when it's present, and we're aware of its presentness, and there's no mistaking it. And then it's past, and we say, perhaps, '*Thank goodness all that's over*'; and we all know quite well what this '*being over*' is, and couldn't mistake it for anything else. I have a very good friend and colleague in Australia, Professor Smart of Adelaide, with whom I often have arguments about this. He's an advocate of the tapestry view of time, and says that when we say '*X is now past*' we just mean '*The latest part of X is earlier than this utterance*'. But, when at the end of some ordeal I say '*Thank goodness that's over*', do I mean '*Thank goodness the latest part of that is earlier than this utterance*'? I certainly do not; I'm not thinking about the utterance at all, it's the *overness*, the *now-endedness*, the *pastness* of the thing that I'm thankful for, and nothing else." – (Prior, 1996, 50)

This leads him to a disavowal of scientific theory:

"So it seems to me that there's a strong case for just digging our heels in here and saying that, relativity or no relativity, if I say I saw a certain flash before you, and you say you saw it first, one of us is just wrong... even if there is just no physical means whatever of deciding which of us it is." – (Prior, 1996, 50)

Bonus q: is there any issue with Prior disregarding the subjective experience of hypothetical observers in relativistic scenarios, given his commitment to the methodology outlined in §2?

But, he motivates this disavowal with a plausible critique of the use of scientific models:

“the theory of relativity isn't about *real* space and time, which the earlier/ later relation is defined in terms of pastness, presentness, and futurity; the 'time' which enters into the so-called space-time of relativity theory isn't this, but is just part of an artificial framework which the scientists have constructed to link together observed facts in the simplest way possible, and from which those things which are systematically concealed from us are quite reasonably left out.” – (Prior, 1996, 50-51)

N.B.

Prior gives an example where Berkeley proved that (newly-invented) calculus didn't apply to a specific phenomena. Moreover, criticisms of the uses of scientific models abound. Relativity is a model, the plum pudding view of the atom was a model of atomic structure (disproved by Niels Bohr, who replaced it with another model, which was later shown in turn to be incomplete). While an outright rejection of science may be problematic to motivate, the rejection of various models and paradigms used by scientific sub-disciplines have proved tenable.

Questions:

- i) Tense logic models everyday discourse by formalising our intuitions about how events exist within the past, present and future. Might the distrust of models undermine Prior's first methodological commitment?
- ii) Smart rejects that A series predicates like past, present and future are real, because the truth value of statements like: “event *a* is in the future” changes without any discernible qualities of the event having changed (compare this to “event *a* is ‘50 minutes long’, or ‘boring’ or ‘happens in Edinburgh’”). McTaggart rejects these predicates because they're contradictory. Who gets it right: Smart & McTaggart, or Prior?

b. Free will

“One of the big differences between the past and the future is that once something has become past, it is, as it were, out of our reach - once a thing has happened, nothing we can do can make it not to have happened. But the future is to some extent, even though it is only to a very small extent, something we can make for ourselves. And this is a distinction which a tenseless logic is unable to express. In my own logic with tenses I would express it this way: We can lay it down as a law that whatever now is the case will always have been the case; but we can't interchange past and future here and lay it down that whatever now is the case has always been going to be the case - I don't think that's a logical law at all; for if something is the work of a free agent, then it wasn't going to be the case until that agent decided that it was. But if happenings are just properties timelessly attached to dates, I don't see how you can make this distinction.” – (Prior, 1996, 48)

N.B.

The view that “whatever now is the case will always have been going to be the case”, seem to imply a view called *fatalism*. This view can be understood as the doctrine that whatever will happen in the future is already unavoidable (where to say that an event is unavoidable is to say that no agent is able to prevent it from occurring).

Aristotle posited a puzzle around the claim that that there will either be a sea-battle in the year 2000, or there will not.

“Hence, if in the whole of time the state of things was such that one or the other was true, it was necessary for this to happen and the state of things always to be such that everything that happens, happens of necessity. For what anyone has truly said would be the case cannot not happen; and of what happens it was always true to say that it would be the case.” – (Aristotle, *'De Interpretatione,'* in *"Categories"*, trans. J.L. Ackrill, (Oxford: Clarendon Press, 1963), pp. 51-52.)

Questions:

- i) what are the problems with holding that the future is ‘closed’, such that claims about the future have a determinate truth value (even if we can't know what that truth value is)?
- ii) What are the problems associated with an ‘open’ future?

Wk5: DAVID LEWIS: PERSONAL & EXTERNAL TIME

CAMBRIDGE CHANGE

“It is essential to distinguish change from “Cambridge change,” which can befall anything. Even a number can “change” from being to not being the rate of exchange between pounds and dollars. Even a momentary event can “change” from being a year ago to being a year and a day ago, or from being forgotten to being remembered. But these are not genuine changes. Not just any old reversal in truth value of a time-sensitive sentence about something makes a change in the thing itself.” — (Lewis, 1976, 146)

“A Cambridge change in a thing is a change in the descriptions (truly) borne by the thing. The phrase “Cambridge change” seems to be due to Geach (1969, 71–2), who so named it to mark its employment by great Cambridge philosophers such as Russell and McTaggart. It is apparent that Cambridge change... includes changes in the relational predicates of a thing, such as when I change from having “non-brother” true of me to having “brother” true of me, just when my mother gives birth to a second son. It might seem faintly paradoxical that there need be no (other) changes in me (height, weight, colouring, memories, character, thoughts) in this circumstance, but it is simply a consequence of the above piece of metalinguistic ascent. It does point up, though, that in attempting to capture the object-language concept, one should take note of the distinction between the monadic or internal or intrinsic properties of a thing, and its relations or external or extrinsic features.” — (Mortensen, 2020)

Questions: what is the distinction Lewis makes between genuine and Cambridge change? How is Cambridge change related to Smart’s reasons for thinking that the A series predicates aren’t real?

PERSONAL TIME:

“a bystander might truly say, three years after the last departure of another famous time traveller, that “*he may even now - if I may use the phrase - be wandering on some plesiosaurus-haunted oolitic coral reef, or beside the lonely saline seas of the Triassic Age.*” If the time traveller does wander on an oolitic coral reef three years after his departure in his personal time, then it is no mistake to say with respect to his extended personal time that the wandering is taking place “*even now*.” — (Lewis, 1976, 146)

Questions: What is personal time? What is external time?

PERSONAL IDENTITY:

Lewis defines a set of conditions that are jointly sufficient to ensure personal identity:

1. Mental (or ‘mostly mental’) continuity and connectedness with respect to *personal* time.
2. Gradual rather than sudden mental and bodily change, such that there’s never sudden change in too many different respects of a person all at once.
3. A restriction on overall change: as Lewis says, people tend to retain some of their properties their whole lives.
4. The connectedness and the continuity are not accidental.
5. The connectedness and the continuity are non-accidental in the right way: because of the non-accidental causal connectedness of persons, we can explain the change a person undergoes by making reference to the properties of the person at an earlier (personal) time.

When we define sufficient (and necessary) conditions of being an *x*, we have to show that they’re not susceptible to counterexamples: these are cases whereby a genuine case of *x* wouldn’t be classified as such according to our conditions, or where a non-*x* would be classified as an *x*. When we defend a set of conditions, we aim to show that all and only *x*es are classified as such under the set. To this end, Lewis considers a possible counterexample of the first sort.

A case of counterfeit time travel: “Fred was created out of thin air, as if in the midst of life; he lived a while, then died. He was created by a demon, and the demon had chosen at random what Fred was to be like at the moment of his creation. Much later someone else, Sam, came to resemble Fred as he was when first created. At the very moment when the resemblance became perfect, the demon destroyed Sam. Fred and Sam together are very much like a single person: a time traveller whose personal time starts at Sam’s birth, goes on to Sam’s destruction and Fred’s creation, and goes on from there to Fred’s death. Taken in this order, the stages of Fred-cum-Sam have the proper connectedness and continuity. But they lack causal continuity, so Fred-cum-Sam is not one person and not a time traveller. Perhaps it was pure coincidence that Fred at his creation and Sam at his destruction were exactly alike; then the connectedness and continuity of Fred-cum-Sam across the crucial point are accidental. Perhaps instead the demon remembered what Fred was like, guided Sam toward perfect resemblance, watched his progress, and destroyed him at the right moment. Then the connectedness and continuity of Fred-cum-Sam has a causal explanation, but of the wrong sort. Either way, Fred’s first stages do not depend causally for their properties on Sam’s last stages. So the case of Fred and Sam is rightly disqualified as a case of personal identity and as a case of time travel.” — (Lewis, 1976, 146)

Questions: Why is it important that according to Lewis’ conditions, Fred and Sam aren’t classed as the same (time-travelling) person? What is the significance of the modified case, whereby the demon chooses to guide Sam’s development in such a way as to cause him to resemble Fred as much as possible before they destroy him? Which condition comes into play here?

CLOSED TIMELIKE CURVES

CTCs are worldlines which curve back upon themselves, such that any material body following a CTC will return to a spatio-temporal position which is in its own past. Some causal processes upon a CTC must therefore be directed towards the past, whilst others are directed towards the future. What emerges is a *closed causal chain* whereby a time-travelling object causally interacts with its own past, which in turn creates the conditions in the future part of the CTC which lead to the object traveling back in the first place.

“Recall the time traveller who talked to himself. He talked to himself about time travel, and in the course of the conversation his older self told his younger self how to build a time machine. That information was available in no other way. His older self knew how because his younger self had been told and the information had been preserved by the causal processes that constitute recording, storage, and retrieval of memory traces. His younger self knew, after the conversation, because his older self had known and the information had been preserved by the causal processes that constitute telling. But where did the information come from in the first place? Why did the whole affair happen? There is simply no answer. The parts of the loop are explicable, the whole of it is not. Strange! But not impossible, and not too different from inexplicabilities we are already inured to. Almost everyone agrees that God, or the Big Bang, or the entire infinite past of the universe, or the decay of a tritium atom, is uncaused and inexplicable. Then if these are possible, why not also the inexplicable causal loops that arise in the time travel?” — (Lewis, 1976, 146)

Arntzenius and Maudlin describe a case where I am going about my everyday business when suddenly a wormhole appears in front of me. Out of the wormhole there appears a black and white photograph, which I in turn take a photograph of, which I keep as a negative. Ten years later, the other end of the wormhole appears, and I, recognising it, throw my negative into it, for my earlier self to find. (Arntzenius & Maudlin, 2013)

Questions: How could this distribution of events be possible on a CTC? Are there possible worlds in which CTCs exist? If yes, what kind of possible worlds are they? Which temporal ontology/ ontologies are most friendly to the idea of CTCs? Why might Prior object to arguments in favour of the possibility of CTCs?

THE GRANDFATHER & MODAL PARADOXES

Lewis (1976) discusses the case of Tim, who travels back in time to kill his grandfather, (before his grandfather conceives Tim’s father), and Vihvelin (1996) gives the example of Katy, who time travels with the express purpose of murdering herself as a one-year old baby. In both cases, the murderer must fail, as a successful murder would preclude either Tim’s or Katy’s time travelling back, as they would not exist (ever, in the case of Tim, or as an adult in Katy’s case). To a similar effect, Joseph Wayne Smith describes a scenario whereby a time traveller travels back to his past not only to kill himself, but also to destroy the time machine that the younger self is working on for good measure.

THE MODAL PARADOX

We might imagine that Katy and Tim are armed to the teeth, hard of heart and utterly intent upon murder. If they stayed within the present, either might take any target of their choice and make a good stab at bumping them off. Indeed, they might travel to any point in the past and make much the same go of murdering whoever they please, excepting themselves or their ancestors. Throughout the entirety of the space-time manifold, she has a reliable chance to do away with any prospective victim, with the exception of her and her ancestors, whom she must always fail to kill. This modal paradox, which states that agents both can and cannot kill their younger selves (or their ancestors), would preclude the metaphysical possibility of time travel, as it would bring about a contradictory state wherein an agent both could and could not act.

Lewis’ Solution: ‘can’ is an indexical for ‘compossible with certain facts (f₁, f₂, f₃...)’, and that when we say that ‘Katy can kill her younger self’, we attend to a narrower range of facts than when we say that ‘Katy cannot kill her younger self’. Explicitly, when we aver that Katy can kill herself as a baby, we only assess her capability within a temporally local context. We assess her motive, equipment, skill and proximity to the baby. When we deny Katy’s ability, we take into account the global context of the statement, which includes the background information that Katy lives to be old enough to travel back in time and attempt autoinfanticide.

Questions: Do the grandfather and modal ‘paradoxes’ constitute genuine cases of paradox? Is Lewis’s solution successful? Is it necessary? How does the device of branching universes help to ameliorate the supposed contradiction?

Wk6: ENDURANCE Vs. PERDURANCE

Today's question is whether ordinary objects like sandwiches, statues and people like you or I *endure* or *perdure*. However, there are two kinds of things that in the first instance are taken, if they do exist at all, to endure, and another kind of things that are commonly held to perdure. These are:

- ◇ Events
- ◇ Universals

Questions: which is commonly taken to endure, and which to perdure? What are the reasons for this general consensus? What is special about events/ universals?

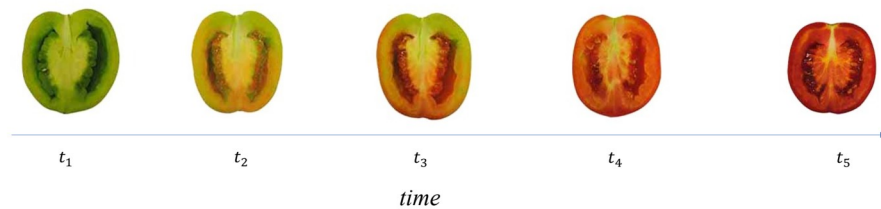
THE CAKE ARGUMENT

David Lewis makes the complaint that “[d]iscussions of endurance versus perdurance tend to be endarkened by people who say such things as this: 'Of course you are wholly present at every moment of your life, except in case of amputation. For at every moment all your parts are there: your legs, your lips, your liver . . .’” — (Lewis, 1983, 202)

I have a similar argument that expresses the (understandable) confusion that leads to comments like this. I call it the cake argument:

If I have a cream cake in front of me, and I eat every last morsel of it, I have polished off the *whole* cake. I have destroyed the whole cake in a moment, so it must be wholly present in this given moment, otherwise I wouldn't have been able to get rid of all of it. Furthermore, if it wholly existed at the moment I did in fact destroy it, it stands to reason that it wholly exists at every other moment of its existence, because I could, in theory at least, have destroyed the whole cake during any of them. That doesn't require me to travel back in time to the instantiation of cake that existed right after I bought it and eat that too, in fact, due to the causal structure of time, doing would preclude me from eating the whole cake later - the cake would already be gone, and I would incur all manner of grandfather paradoxes if I were to try to do so.

Questions: what is the problem with this argument? Where might the confusion lie?

THE PROBLEM OF CHANGE

All types of properties can change. Lewis offers three solutions to the problem of change:

1. Relationalism
2. Presentism
3. Perdurantism

Questions: Which does Lewis advocate? What does he think is wrong with the other two? Do you agree?

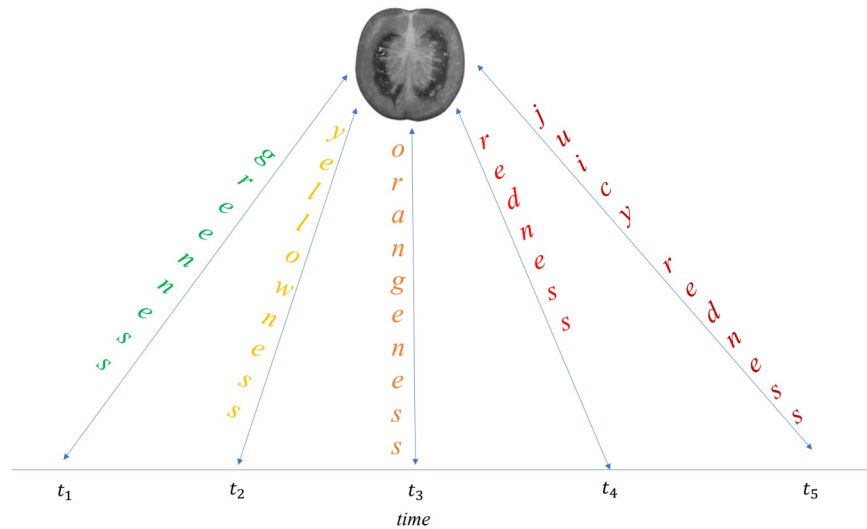
THE PROBLEM OF TEMPORARY INTRINSICS

Temporary intrinsics are properties that an object holds. They're **intrinsic**, because they come down entirely to “the way that thing itself, and nothing else, is”, which is Lewis' gloss of intrinsicality (Lewis, 1983, 197). Compare two properties that I instantiate in different ways: I'm intrinsically human, extrinsically a sister. Temporary intrinsics are **temporary** because they're not held by the object that instantiates them at every moment of its existence. For example, I'm permanently human – there never has or will be a moment when I'm not human. However, my brother is younger than I am, so I've only temporarily held the property of being a sister.

Lewis indicates a problem with temporary intrinsics for the relationalist's view. Let's consider a tomato that ripens from red, to yellow, to green. Relationalism implies that the temporarily held properties of the tomato (and enduring objects more generally)

are extrinsic rather than intrinsic. The truth of the matter of the tomato's greenness, say, depends on the way that the tomato relates to times, which is to say to features external to the tomato. This strips the tomato of its intrinsic nature and forces us to reconsider our conception of changeable properties like colour.

According to this picture, temporarily held properties like the redness of the tomato become akin to properties like *being shorter than somebody else*, in that both of these properties depend upon features external to and distinct from the objects that instantiate these properties. A person could not be a shorter than someone else unless another person existed and they stood in a specific kind of relation to the first person (explicitly the *shorter than* relation). In much the same way, statements attesting to the tomato being red are made true by the tomato standing in a redness relation to a specific time.



Questions: How much of a problem is the problem of temporary intrinsics for the relationalist? Are properties relations to times? Can this problem be surmounted?

PERDURANTISM

Both an endurantist and a perdurantist will temporally relativise the instantiation of colour properties of a tomato that changes from green to red. The perdurantist will use temporal parts to say that *tomato-at-t1* instantiates green, and *tomato-at-t4* instantiates red. Perdurantism has a particularly neat model of temporal relativisation whereby a temporarily held property is instantiated by a temporal part of the changing object. According to perdurantism, physical objects have a temporal part at every moment and for every interval of time that they exist, and the fusion of these temporal parts is identical to the object to which they belong.

Questions: How does the perdurantist solve the problem of change and avoid the problem of temporary intrinsics? Is perdurantism tenable?

ADVERBIALISM

Haslanger argues that her brand of endurantism can avoid the problem of temporary intrinsics, which forces us “to treat objects as related to their properties as individuals are related to other individuals” (Haslanger, 1989, 122). Instead, she advocates adverbialism. Adverbialists make use of the syntax of adverbs to relativise the way an object satisfies its predication in a novel way. They “allow temporal adverb dropping” to resolve the discrepancy in properties resulting as objects undergo change (Johnston & Forbes, 1987, 128). It is permissible for an object *a* to have differing properties *P* and *Q* at differing times *t1* and *t2*, so long as *P* and *Q* are instantiated in a different sort of way, which appear as *a* is *P t1-ly*, and also *Q t2-ly*, where *P* and *Q* are actual intrinsic properties of *a*.

Questions: Can adverbialism save the endurantist? Does adverbialism solve the problem of change?

Wk 7: HINCHLIFF'S CANDLE ARGUMENT

NECESSARY & SUFFICIENT CONDITIONS

Hinchliff's set of (individually necessary, jointly sufficient) conditions for change:

- (1) Objects persist through the change. The change alters the object but does not destroy it.
- (2) Temporary properties are not relations. The predicates that express them are one-placed, not many-placed.
- (3) The object itself has the temporary properties. Not just a part of it, but *the* object. If the object itself does not have the different temporary properties, the object cannot be understood as having changed.
- (4) The temporary properties are incompatible. Change requires incompatible (earlier and later) properties.

“For the eternalist, there is nothing special about t ; no time is metaphysically distinguished. So if everything just has the properties it has at t , then everything just has the properties it has at any time. But that is impossible. The candle cannot just have the shapes it has at t and t' . They are incompatible. The supposition that the candle itself just has one of its shapes thus leads to a contradiction. Assuming that eternalism is true, the candle itself cannot just have a shape. Assuming that eternalism is true, we are thus led to deny one of our intuitions.” — (Hinchliff, 1996, 123)

Questions:

- Why does Hinchliff state that these conditions are jointly inconsistent, assuming an eternalist ontology?
- Which condition does perdurantism/ relationalism/ stage theory deny?
- Which, if any, would you deny?

A FIFTH CONDITION?

At a point, Hinchliff, seems to endorse the additional condition that:

- (5*) Objects lose and/ or gain their temporary properties, they are not held by the object even when they are not being instantiated.

The complaint is expressed against what he calls ‘*The Relativization Variant*’:

“The relationalist may seek to accommodate our intuition that shapes are properties by replying that shapes are relativized properties. A property, as we have noted, is one-placed; a single thing can just have it, have it without qualification or reference to anything else, just plain have it. In contrast, a thing cannot just have a relativized property but can only have it relative to a time. There are genuine properties on the relationalist's scheme, such as being straight at t ; a candle can just have that property. However, the genuine properties the relationalist recognizes cannot be lost or gained. Because shapes can be lost or gained, the relationalist denies they are properties and maintains instead that they are relativized properties.” — (Hinchliff, 1996, 121)

Questions:

- How plausible is condition (5*)?
- How does the relationalist/ worm-theoretic perdurantist/ adverbialist fail to accommodate it?
- Is this of theoretical cost to the relationalist, or just endurantist views in general?

CAN EVENTS CHANGE?

D. H. Mellor: “different entities differing in their properties do not amount to change even when, as here, one is later than the other and both are parts of something else.... Change requires one and the same changing thing to have both the incompatible properties concerned.” — (Mellor, 1981, 111)

Galton & Mizogichi: “the event as a whole occupies an interval of time; if in its early stages the event has a certain property which it lacks in its later stages, then it is not the event as a whole which either has the property or lacks it, but rather one part of the event has the property and another part lacks it...The properties of an event are properties of the event as a whole. It has temporal parts which may have different properties but this is not change since it is not the same thing that has the different properties.” — (Galton & Mizogichi, 2009, 7)

Questions:

- Why do Hinchliff, Mellor, Galton & Mizogichi and Smart think that events cannot change?
- Are they correct?

A (non-exhaustive) ONTOLOGICAL TAXONOMY OF VIEWS:

Domain:	Parsimonious ontology?	Profligate ontology?
<i>Space</i>	Only the things that exist here (or very close by to here) exist. N.B. this view has no name, but a very extreme version of this view is called solipsism .	All of the things that exist in the universe, wherever they're located, exist.
<i>Time</i>	Presentism: only the things which exist now exist.	Eternalism: all of the things that existed in the past, exist now in the present, and will exist in the future exist.
<i>Modality</i>	Actualism: only actual things exist.	Possibilism: all possible things exist.

Questions:

- Which views are more plausible?
- Will you choose from the same column?
- If not, why not?
- How may the difference between *qualitative* and *quantitative* parsimony help motivate choices from the right-hand column?

PRESENTISM

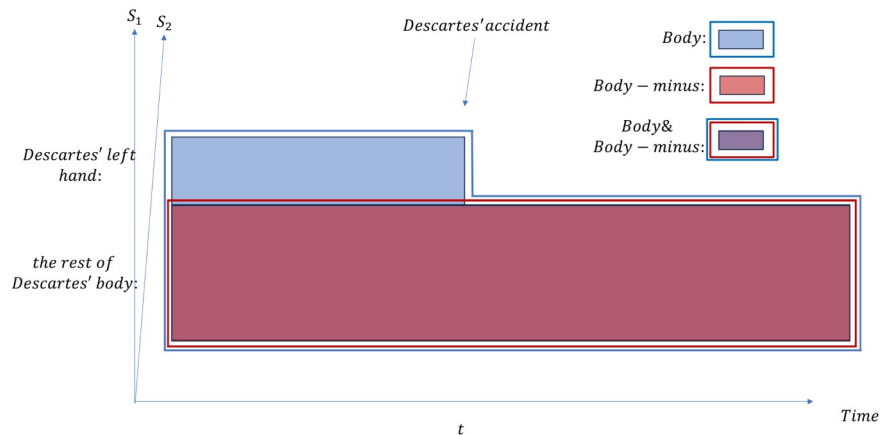
“The presentist maintains that the candle itself was straight and is bent. The presentist blocks the inference from this claim to the contradiction that the candle is both straight and bent by appeal to his view of time. According to presentism, being straight is a property the candle had, but it is not a property the candle has. Having been straight is no more a way of being straight than not being straight is a way of being straight. Being straight is a way the candle *was*, not a way the candle *is*. The way the candle *is*, according to presentism, is the way it presently is - bent. The presentist thus preserves all of our intuitions about change without contradiction.” — (Hinchliff, 1996, 126)

Questions:

- What are the criticisms that might be levelled at the presentist's explanation of change? (*hint*: what might a critic of A series predicates object?)
- Does presentism provide a genuine solution to the problem of change?
- Might there be other problems inherent to presentism as regards fitting to our best current scientific theories?

WK 8: FOUR-DIMENSIONALISM**THE SETUP****The “unpleasant alternatives”:**

- (a) there is no such physical object as my body.
- (b) there is no physical object in the space that we would typically say is now exactly occupied by all of me other than my left hand.
- (c) no physical object can undergo a loss of parts.
- (d) there can be distinct physical objects exactly occupying the same space at the same time.
- (e) identity is not transitive.

**The objects:**

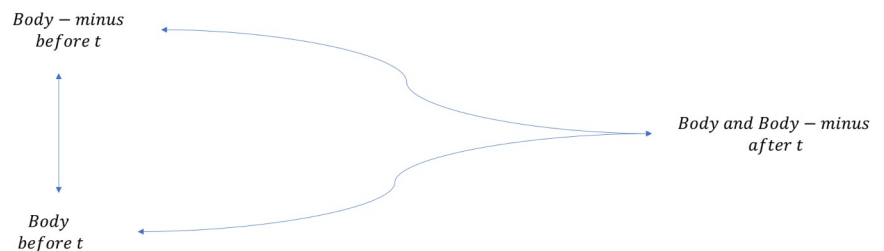
Body: Heller's body

Body-minus: the object that occupies all of the space that Heller's body occupies *except* for the space occupied by his left hand.

The argument:

- (1) the thing that, before t , is Body-minus = the thing that, after t , is Body-minus.
- (2) the thing that, after t , is Body = the thing that, before t , is Body.
- (3) the thing that, after t , is Body-minus = the thing that, after t , is Body.
- (4) the thing that, before t , is Body-minus = the thing that, before t , is Body.
- (5) the thing that, before t , is Body-minus $\neq$ the thing that, before t , is Body.
- 6) $\perp$ Absurdum (5) & (4).

Questions: which 'unpleasant alternative' would we have to accept in order to deny premise 2? 3? 4? Are they all as equally unpleasant as one another? Which premise(s) does Heller reject? What is his reasoning, and what metaphysical theory does he think is liable for causing the contradiction in the first place?

**THE (DIS)ANALOGY:**

As a perdurantist, Heller is committed to the task of motivating the putative analogy between the temporal and spatial dimensions. He however also considers two salient disanalogies.

The analogies:

- There are both temporal and spatial “distances” or lengths/ intervals. Spatial boundaries (how big something is) can be compared to temporal boundaries (how long something's duration lasts).

“A spatiotemporal part...is a hunk of matter. If Heller is a physical object, then so is Heller's-left-hand-from-(1: 00 p.m., January 3 , 1980)-to-(1: 01 p.m., January 3 , 1980). This spatiotemporal part of me could have, between 1:00 pm. and 1:01

p.m. on Jan 3, 1980, been felt, seen, heard, smelled, and, if need be, tasted. It had weight and volume. Thinking of spatiotemporal parts as physical objects corresponds to the way we ordinarily think of parts on our old three dimensional picture” — (Heller, 1984, 326-7).

- Temporal and spatial mereology – the ‘part-whole’ relation (humans, for example, have spatial and temporal parts and wholes).

The *disanalogies*:

- The primitive directionality of time:
 - The ‘arrow’ of time.
 - Asymmetries in perception – we have direct access to the present, indirect access to the past through memory, and can only predict the future (with varying degrees of accuracy).
- Units of measurement: miles, cm, inches yards, lightyears vs seconds, millennia, days etc.

Questions: are the temporal and spatial dimensions similar *enough* to ground the perdurantist’s analogy between objects and events? Are there any further analogous/ disanalogous features of space and time that might have a bearing on the perdurantist’s thesis?

THOMPSON’S *EX NIHILO* CRITIQUE:

“[I]f I have had exactly one bit of chalk in my hand for the last hour, then there is something in my hand which is white, roughly cylindrical in shape, and dusty, something which also has a weight, something which is chalk, which was not in my hand three minutes ago, and indeed, such that no part of it was in my hand three minutes ago. As I hold the bit of chalk in my hand, new stuff, new chalk keeps constantly coming into existence *ex nihilo*. That strikes me as obviously false” — (Thompson, 1983, 213).

Heller replies that two things explain the existence of the new temporal parts that come into being:

- The passage of time.
- The causal features of the scenario – what has come immediately before.

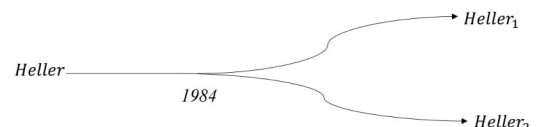
Questions: why does Heller think that these two features are sufficient to explain how and why new temporal parts come into being? How successful is Thompson’s critique? Is Heller able to resist it?

COINCIDENT ENTITIES

Judith Jarvis Thompson (1983) and Ted Sider (1996) think that worm-theoretic perdurantists are committed to the possibility of coincident objects. Sider calls such a possibility “preposterous” because the properties of the two objects are not additive (Sider, 1996, 441). Sider’s thought is that if there are two objects, and both of these objects can be said to have certain properties, the composite object must instantiate the sum of these properties. Sider’s criticism has precedent, and has been widely discussed in the more general study of composition as ‘the problem of coincidence’ (Johnston, 1992; Noonan, 1993; Lowe, 1995; Wasserman, 2002 & 2018; Moyer 2006; Walters 2019 *inter alia*). Four kinds of cases are often discussed in the literature about coincident entities: fission, replacement, fusion and construction. Heller discusses the first two:

Fission:

“If I were to undergo fission next year, that should not tempt us to say that prior to 1984 there were two objects in the same space at the same time. Rather, we should say that two four dimensional objects overlapped prior to 1984 - they shared a common temporal part.” — (Heller, 1984, 330).



Replacement:

A silver ring is subject to wear and is gradually replaced piece by piece with gold until it is made of solid gold.

Questions: Heller replies that perdurantism only implies coincidence when it is combined with the assumption of three-dimensionality, and that the adoption of a four-dimensional view allows worm-theoretic perdurantists to reject the idea that these cases imply genuine coincidence. What is his argument and does it succeed? How should the worm-theoretic perdurantist think of these two cases?

Heller considers Body after t and Body-minus after t . These object(s) occupy exactly the same spatio-temporal region: “It might be claimed that here we have an example of two distinct objects in the same space at the same time. But this again would be a mistake, for these temporal parts are not two distinct objects but, rather, one object under two descriptions. Body and Body-minus have a common temporal part, just as my living room and my dining room have a common spatial part” — (Heller, 1984, 333).

Questions: Does Heller successfully avoid the implication of coincidence? Why is it so important to him that he does so? Do you agree with the theoretical importance that Heller places on the avoidance of coincidence?

Wk 9: STAGE THEORY

STAGES Vs. WORMS

The most salient difference between worm-theoretic perdurantism and stage-theoretic ‘perdurantism’ is in their definitions of **ordinary objects**.

Worm-theoretic perdurantism: ordinary objects are *worms*.

Stage-theoretic perdurantism: ordinary objects are *stages* (or the instantaneous temporal cross-sections of the worm, otherwise known as ‘instantaneous temporal parts’ or ITPs).

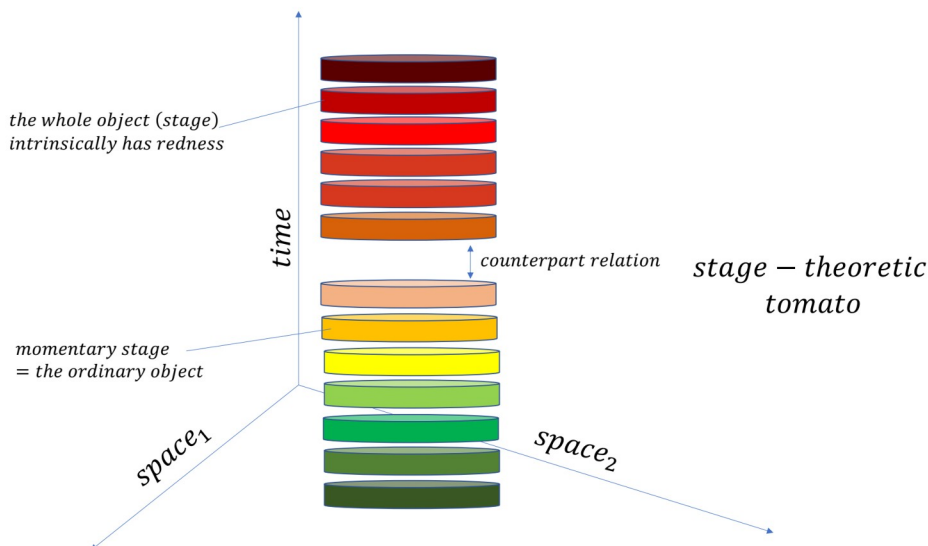
Two clarificatory points:

- 1) Sider, (as he explicitly mentions) does believe that space-time worms are *objects*, he just thinks that they’re not *ordinary objects* (in much the same way, worm-theoretic perdurantists think that stages are objects, but not ordinary objects).
- 2) Sider is not advocating a presentist or endurantist ontology. Though stage theory states that an ordinary object is wholly present at any time during its existence (during any of its ‘stages’), all of the other past and future stages of the object eternally exist in the same way that past and future temporal parts exist according to the worm-theoretic perdurantist. Sider is a 4-dimensionalist, and stage theory is (at least nominally) a form of perdurantism.

Questions: if stage theorists don’t think that temporally extended worms are *ordinary* objects, what kind of objects might they think that worms are? If worm theorists think that stages aren’t *ordinary* objects, what kind of objects might they think that stages are?

Are ordinary objects stages or worms? Which view might be implied by:

- a) Hinchliff’s candle argument?
- b) Lewis’ Hume Highway analogy?
- c) Heller’s Body & Body-minus thought experiment?
- d) The ‘you look beautiful’ argument from ordinary language use that we looked at for last week’s assignment?
- e) The idea that some predicates are necessarily instantiated over time?



THE MODAL ANALOGY – WHAT MAKES AN OBJECT THE SAME OBJECT OVER TIME?

Worm-theoretic perdurantism relates the object that exists in the present to its past and future instantiations in virtue of their all being parts that belong to the same ordinary object. Stage theory can’t make use of this idea because each stage *is* the ordinary object. Instead, these object-stages relate to each other analogously to Lewis’ counterpart theory of modality.

“According to counterpart theory, an object *x*, has the property **possibly being F** iff there is some object in some possible world that has F, and bears the counterpart relation to *x*... The temporal operator ‘was’, and also the temporal operators ‘will be’, ‘will be at *t*’ etc., are analogous to the temporal operator ‘possibly’” — (Sider, 1996, 439).

This introduces a new conception of persistence which is borne out by temporal counterpart relations, which obtain between the stages of perduring objects. Even though an ordinary object is wholly present as a stage, it is linked to the stages that it has been and the stages that it will be, making statements such as ‘the banana was yellow’ true for some banana-stage b_0 at time t iff some banana-stage $b-1$ prior to t is appropriately temporally counterpart-related to b_0 and is yellow.

Question: Imagine your counterpart who exists in a world which realises the possibility expressed by the modal statement ‘you could have been two inches shorter’. Imagine your fourteen-year-old self. Does it intuitively feel correct to say that they are a counterpart of your current selves, in the same way that you’re a counterpart of your shorter, merely possible self? Compare this to the idea that your current self and your fourteen-year-old self are both parts of the same person-worm.

FILMSTRIP CONTINUITY

Robert Nozick: temporal continuity cannot be likened to an infinite amount of film stills where one still corresponds to every instant of an object’s persistence. A film of a continuous ‘object’ is not evidence of spatial continuity, as such a film might have been made from multiple close-together objects (think of a film of a fast-moving train – you can’t discern the gaps between the carriages as they all blur into one seemingly continuous object). It is therefore not enough to point to a set of successive stages that share a resemblance, as different (but qualitatively similar and temporally proximal) objects may exhibit this kind of temporal pseudo-continuity and yet remain distinct (Nozick, 1981, 35).

The Disappearing and Producing Machines: I vanish a vase of flowers with a disappearing machine but have set up a producing machine to produce another (qualitatively identical) vase of flowers. I’ve calibrated the machines to vanish and produce continuously, exactly half a cycle out of sync, so that the moment one vase of flowers is vanished, another is put back in its place (Nozick, 1981, 665 n.7).

Takashi Yagisawa: filmstrip continuity *is* compatible with genuine persistence.

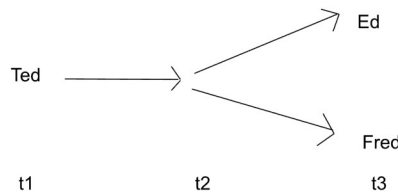
The Disappearing and Producing God: there is a God that ensures the persistence of all things, not by keeping them in existence but by vanishing them every instant and replacing them as soon as they are vanished. The God produces new objects such that they behave exactly like the objects they replace.

Godless scenario: there’s a universe in which all objects exist for only an instant before being replaced such that the objects’ behaviour is indistinguishable from the behaviour of objects that are not vanished and replaced (Yagisawa, 2009, 113).

Questions: Does the vase of flowers persist? Do objects persist in Yagisawa’s a) theistic, and b) godless universes? If so, why, and if not, why not?

COINCIDENCE CASES

Sider imagines a case where at t_1 Ted is a single person who splits at time t_2 and becomes Ed and Fred at t_3 . If persons are, as worm-theoretic perdurantism suggests, aggregates of their temporal parts, then Ed and Fred are co-located before t_2 . Sider thinks that co-located objects are “preposterous” because the properties of the two objects are not additive (Sider, 1996, 441). Sider’s thought is that if there are two objects, and both of these objects can be said to have certain properties, the coincident object must instantiate the sum of these properties. For example, Ted must have the combined mass of Ed and Fred.



A rejoinder: Proponents of ‘closest continuer’ theory such as Sidney Shoemaker (1979) and Robert Nozick (1981) deny that Ted survives fission, because there is no stage (of either Ed or Fred) which is the closest continuer of the stages that Ted consists of. There is an infinitely dense chain of Ted-stages up to t_2 . *Ex hypothesi*, there are two streams of infinitely dense Ed-stages and Fred-stages that branch out from the Ted-stages, which are both connected to the end of the Ted-stages by an

infinitely small temporal gap. Neither Ed nor Fred is therefore the closest link in the chain and therefore neither is Ted's closest continuer. Ted therefore ceases to exist at t_2 .

Questions: we don't need 'closest continuer' theory if we accept that Fred and Ed share their temporal parts that exist before t_2 . Should we accept Sider's reasoning against doing this? If so, does 'closest continuer' theory solve the additivity problem for the worm-theoretic perdurantist? Is it plausible that 'double survival' for Ted means his death?