McTaggart's proof of the unreality of time

philosophy and religion of the East—we find that the unreality of time continually recurs. Neither religion ever hold themselves apart from mysticism [peri]od, and almost all mysticism denies the reality [phi]losophy time is treated as unreal by Spinoza, by Hegel. Among more modern thinkers, the same by Mr Bradley. Such a concurrence of opinion is ..., and is not the less significant because the such different forms, and is supported by such [argum]ents. ... nothing that exists can be temporal, and that is unreal. But I believe it for reasons which are by any of the philosophers I have just mentioned. ... time appears to us *primâ facie*, are [i]n two ways. Each position is Earlier than some some of the other positions. To constitute such [is] required a transitive asymmetrical relation, and

John McTaggart Ellis McTaggart was born in 1866, the most important work, from which our reading today was taken, was published in two parts in1921 and, posthumously, in 1927. It is called, modestly, *The Nature of Existence*.

Personally, McTaggart's life seems to have been unexceptional, though marked by eccentricity. He was known around Cambridge for his habits of getting around by riding a tricycle, and for saluting cats when he passed them.

His central philosophical conviction was that reality is fundamentally spiritual; and his central aim was to show this by deriving contradictions from the assumption that the material world exists in time.
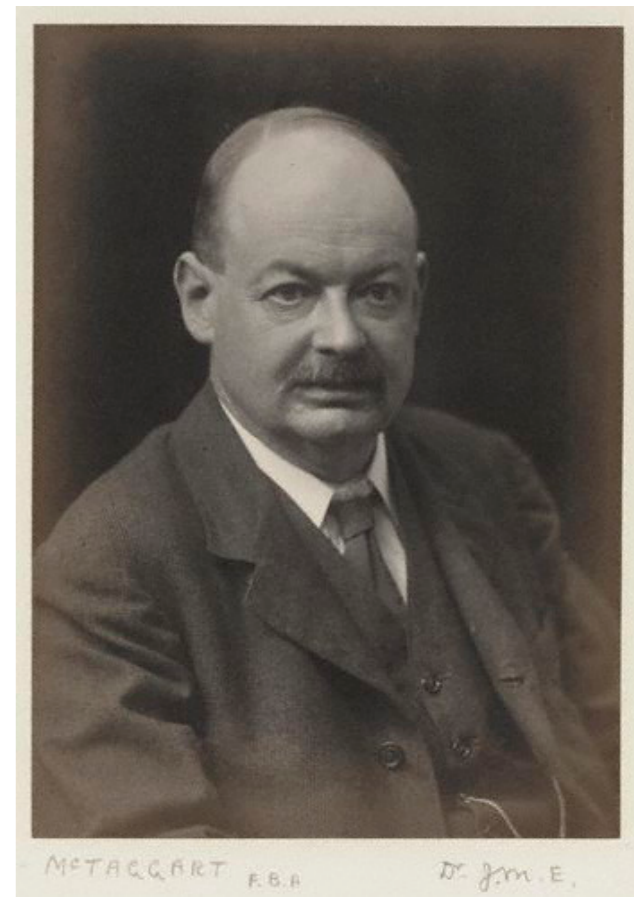
The most important of his arguments of this sort was his argument that the existence of time itself involves a contradiction. In the passage we read, he puts his view very clearly:

> I believe that nothing that exists can be temporal, and that therefore time is unreal.

for any long period, and almost all mysticism denies the reality of time. In philosophy, time is treated as unreal by Spinoza, by Kant, and by Hegel. Among more modern thinkers, the same view is taken by Mr Bradley. Such a concurrence of opinion is highly significant, and is not the less significant because

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therefore time is unreal. But I believe it for reasons which are not put forward by any of the philosophers I have just mentioned.

The key to understanding McTaggart's argument is understanding his distinction between the A-properties and the B-properties.

305. Positions in time, as time appears to us *primâ facie*, are distinguished in two ways. Each position is Earlier than some and Later than some of the other positions. To constitute such a series there is required a transitive asymmetrical relation, and a collection of terms such that, of any two of them, either the first is in this relation to the second, or the second is in this relation to the first. We may take here either the relation of "earlier than" or the relation of "later than," both of which, of course, are transitive and asymmetrical. If we take the first, then the terms have to be such that, of any two of them, either the first is earlier than the second, or the second is earlier than the first.

In the second place, each position is either Past, Present, or Future. The distinctions of the former class are permanent, while those of the latter are not. If M is ever earlier than N, it is always earlier. But an event, which is now present, was future, and will be past.

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Here McTaggart says that the first class of properties he is interested in -- which he later calls the **B series properties** -- includes "earlier than" and "later than" and is **permanent**, in the sense that if an event has a certain B-series property, it always does. So, for example, if X is earlier than Y, then X is **always** earlier than Y.

The second class of properties -- which he later calls the **A series properties** -- includes "past", "present", and "future." These properties are **not permanent**: so, for example, is an event is future, this does **not** imply that it will always be future.

It's important to get a handle on this distinction; let's run through some examples.

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A-series properties

B-series properties

McTaggart lived **before** you were born.

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The Bush administration is **in the past relative to 2010**.

I think that two things are clear: McTaggart is right that there is a genuine distinction between these two classes of properties, and in our ordinary thought about time, we do think that some events really have both kinds of properties.

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Using this distinction, McTaggart's argument can be thought of as having the following structure:

1. Nothing really has any A-series property.
2. If nothing really has any A-series property, then nothing exists in time.

C. Nothing exists in time. (1,2)

Let's turn first to his argument for premise 1.

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Here is what McTaggart says about this premise:

> ...ast, present, and future are incompatible determinations. ...ent must be one or the other, but no event can be more ... If I say that any event is past, that implies that it ...r present nor future, and so with the others. And this ...ness is essential to change, and therefore to time. For ...change we can get is from future to present, and from ...o past.
> ...haracteristics, therefore, are incompatible. But every ...s them all[1]. If M is past, it has been present and future. ...ature, it will be present and past. If it is present, it ... ...ure and will be past. Thus all the three characterist ...o each event. How is this consistent with their bei

The idea here seems to be this: if any event has one of the three basic A-series properties of past, present, and future, it has all of them. (Let's forget for now about the possibility of a first and last moment of time; they would have just two of these three properties.) But this is impossible, since these properties are, as he says, incompatible. So no event ever has any of these properties.

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We can lay out this defense of premise 1 as follows:

1. If any event has one of the following properties — being past, being present, being future — then it also has the others.
2. No event can have more than one of the following properties: being past, being present, being future.
   _____
C. No event has any of the following properties: being past, being present, being future. (1,2)

McTaggart's argument that there is a contradiction in the A-series.

This is a valid argument; it is of the form: (1) If p then q, (2) not-q, therefore (C) not-p.

So, the only question we need to ask about this defense of premise (1) of McTaggart's argument for the unreality of time is: are its premises true?

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As McTaggart is aware, this argument is open to an obvious objection. (As he puts it, "it has been impossible to state the difficulty without almost giving the explanation.") The objection might be put like this:

> McTaggart's argument rests on an ambiguity. Every event has all of the A-series properties **at some time or other**; but what is impossible is that any event have all of these properties **at the same time**. We can't just talk simply about events having these properties -- being past, present and future -- we have to talk about them having these properties **at certain times**. And when we do that, the contradiction goes away, since there is no contradiction in a certain event being past at one time but future at another.

Let's call this **the obvious objection**. McTaggart thinks that the obvious objection fails. To see why, we have to ask: what does it mean for an event to have one of these three properties **at a certain time**?

1. Nothing really has any A-series property.
2. If nothing really has any A-series property, then nothing exists in time.

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What does it mean for an event to have one of these three properties **at a certain time**?

Here is one thing we might mean: perhaps no event simply has the properties of being past, present, and future. Instead, it has these properties: will be past, is present, was future. So instead of our three simple A-series properties--

past
present
future

We should really be talking about these nine second-level A-series properties:

was past	is past	will be past
was present	is present	will be present
was future	is future	will be future

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was past	is past	will be past
was present	is present	will be present
was future	is future	will be future

Or, in other words:

past in the past	past in the present	past in the future
present in the past	present in the present	present in the future
future in the past	future in the present	future in the future

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McTaggart thinks that this delays rather than resolves the contradiction in the A-series.

The problem that McTaggart sees here is that just as our three initial A-series properties (past, present, future) are both incompatible and such that every event that has one has them all, the same can be said of our new nine A-series properties.

To see this, focus on the three "middle" second-level A-series properties. Isn't there the same contradiction in an event having all three of these as in an event having the three first-level A-series properties of being past, present, and future?

One might reply to McTaggart as follows:

> No, it simply is not true that every event has each of these nine second-level A-series properties; each event has all of these properties **at some time**. While it is true that event event which **is** present in the present **was** future in the present and **will be** past in the present, no event has each of these properties **at the same time**.

This is to repeat the obvious objection: it is once again to insist that we can only talk about events having A-series properties at a certain time. But on our present construal of that objection, this just amounts to the claim that we should abandon the 9 second-level A-series properties in favor of the 27 third-level A-series properties.

9 second-level A-series properties

past in the past
present in the past
future in the past

past in the present
present in the present
future in the present

past in the future
present in the future
future in the future

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To see that this will not help, it is sufficient to note that among the 27 third-level A-series properties will be:

> past in the present in the present
> present in the present in the present
> future in the present in the present

But as with the relevant first- and second-level A-series properties it seems both that (i) every event has all of these third-level properties, and yet (ii) these third-level properties are incompatible. Hence the contradiction in the A-series, McTaggart thinks, remains.

at some moment of past time. But every moment, like every event, is both past, present, and future. And so a similar difficulty arises. If M is present, there is no moment of past time at which it is past. But the moments of future time, in which it is past, are equally moments of past time, in which it cannot be past. Again, that M is future and will be present and past means that M is future at a moment of present time, and present and past at different moments of future time. In that case it cannot be present or past at any moments of past time. But all the moments of future time, in which M will be present or past, are equally moments of past time.

332. And thus again we get a contradiction, since the moments at which M has any one of the three determinations of the A series are also moments at which it cannot have that determination. If we try to avoid this by saying of these moments what had been previously said of M itself—that some moment, for example, is future, and will be present and past—then "is" and

This, of course, is the same difficulty over again. And so on infinitely.

Such an infinity is vicious. The attribution of the characteristics past, present, and future to the terms of any series leads to a contradiction, unless it is specified that they have them successively. This means, as we have seen, that they have them in relation to terms specified as past, present, and future. These again, to avoid a like contradiction, must in turn be specified as past, present, and future. And, since this continues infinitely, the first set of terms never escapes from contradiction at all[1].

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Let's sum up. The obvious objection to McTaggart's defense of premise (1) of his argument was that we can't just talk about events having the A-series properties of past, present, and future, but rather must talk about whether an event **is present** or **was future**. This amounted to a switch from first-level to second-level A-series properties; but we saw that this does not avoid the contradiction. And this contradiction will remain at the third level, the fourth level, and so on. So the obvious objection does not seem to remove the contradiction in the A-series, and so does not help to block McTaggart's defense of the first premise of his argument for the unreality of time.

However, one might at this point try a different line of reply:

The obvious objection, take 2

Look, when I said that events don't simply have or not have the A-series properties but only have them at a time, I didn't mean to replace past, present, and future, with second-level A-series properties like being past in the present. What I meant was that the properties that events **really have** are properties like

past relative to 1/1/2010

and these properties don't seem to lead to any contradiction, since it is simply not true that every event which has this property also has, for example, the property of being future relative to 1/1/2010. So McTaggart's argument that the A-series involves a contradiction fails.

What is wrong with version 2 of the obvious objection, from the point of view of someone who wants to object to premise (1) of McTaggart's argument for the unreality of time?

It is very natural to think that we can block McTaggart's argument for the conclusion that the A-series is contradictory by saying that events only have A-series properties at certain times. But on one way of developing this thought, we don't really get rid of the contradiction; and on the other, we end up giving up on A-series properties altogether, which is just to agree with McTaggart's first premise.

McTaggart's argument for the unreality of time

1. Nothing really has any A-series property.
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At this point, you might wonder: why would this be so bad? Why not think that events have B-series properties, but don't really have A-series properties? Why think, as McTaggart's premise (2) says, that if we give up on the A-series properties we have to give up on the idea that objects exist in time at all?

McTaggart defends the second premise of his argument by trying to show that time requires change, and that genuine change requires the reality of A-series properties.

Take any event—the death of Queen Anne, for example—and consider what changes 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 the death of a Queen. At the last moment of time—if time has a last moment—it will still be the death of a Queen. And in every respect but one, it is equally devoid of change. But in one respect it does change. It was once an event in the far future. It became every moment an event in the nearer future. At last it was present. Then it became past, and will always remain past, though every moment it becomes further and further past[1].

Such characteristics as these are the only characteristics which can change. And, therefore, if there is any change, it must be looked for in the *A* series, and in the *A* series alone. If there is no real *A* series, there is no real change. The *B* series, therefore, is not by itself sufficient to constitute time, since time involves change.

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One might, however, respond to McTaggart's argument as follows:

The B-theory of time

The only genuine temporal properties are the B-series properties. But objects still change, since for an object to change is just for that object to have different properties at different times. Of course, it is always true (and always was true) that the object would have those properties at those times. But that doesn't mean that the object doesn't change.

The B-theorist defends the reality of time by agreeing with McTaggart about the A-properties, but rejecting premise 2 of McTaggart's argument.

Is the B-theory an acceptable view of time?

One apparent consequence of the B-theory is **eternalism**: the view that the past and the future - and the objects and events of the past and future - exist in just the same way as the objects and events of the present moment. This seems to be a consequence of the B-theory, since according to the B-theory there is no property of "being the present moment" which singles out one time as special. (That would be an A-series property.)

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One way to understand eternalism is by analogy with space. No one (at least, no one sensible) would think that only objects **here** exist; the eternalist makes an analogous claim about the **now**. Indeed, the spatial analogy is useful for understanding the B-theory more generally. Denial of A-series properties is sort of like the denial that there is any genuine property of **here-ness**.

Many people find eternalism to be hard to accept. When we say that the past is **gone**, for example, aren't we saying that it no longer exists?

But perhaps this is an area in which common sense should be rejected; after all, as we've seen, the B-theorist can point out that eternalism can be given a plausible defense from the theory of special relativity's claim that there is no such thing as absolute simultaneity. And if there are no facts about which events are absolutely simultaneous with a certain event, how can we draw a distinction between what exists and what does not in terms of the present moment?
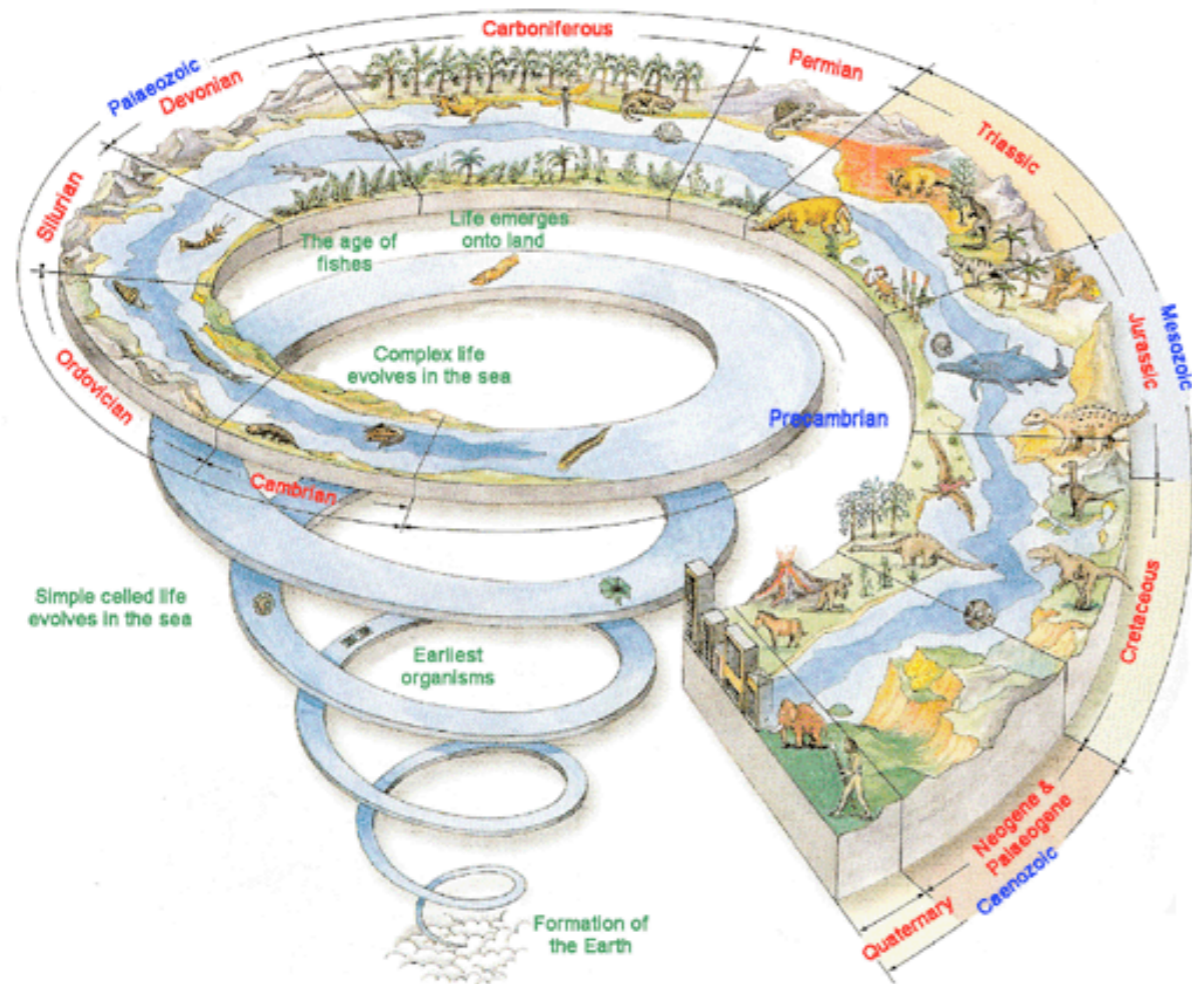
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But there are some other surprising consequences of the B-theory. One is the status that it assigns to the present moment.
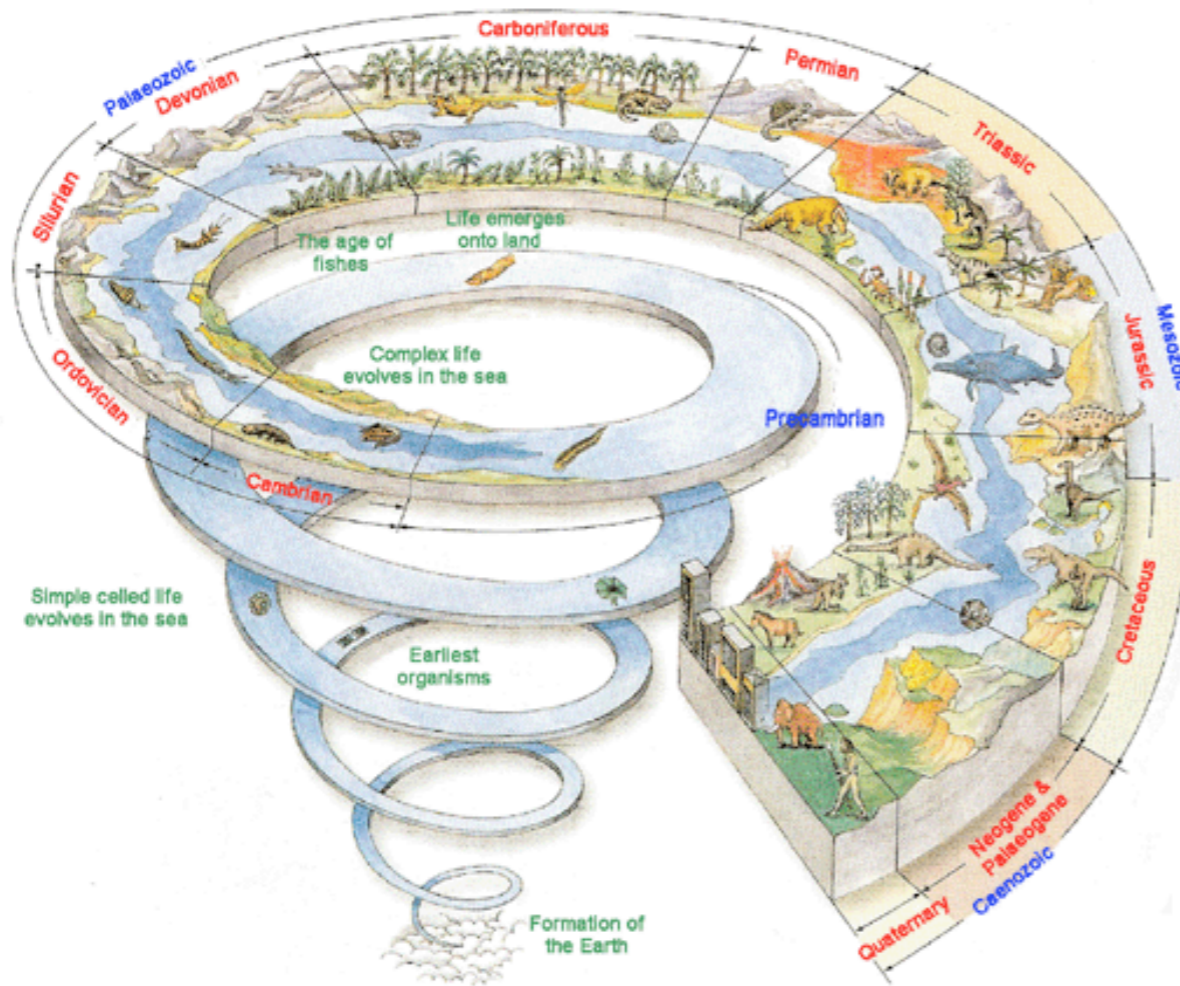
Suppose that you have complete amnesia, and are presented with a series of books which detail the whole history of planet earth -- past, present, and future. You might think that when you finish reading the books, you will still have one question which in unanswered: namely, Which moment is the present moment?

There is a sense in which the B-theorist thinks that this question has only a trivial answer: each time is present relative to itself, and no event is PRESENT, period, since no event has any A-series properties. But this seems odd. Doesn't our history leave out a genuine fact?

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The B-theorist can reply that there is a sense in which our history "leaves something out"; but this is the same sense in which the map at right leaves something out. Since this should not convince us that there is an objective property of "here-ness", the example of the world-history should not convince us of the reality of A-series properties.
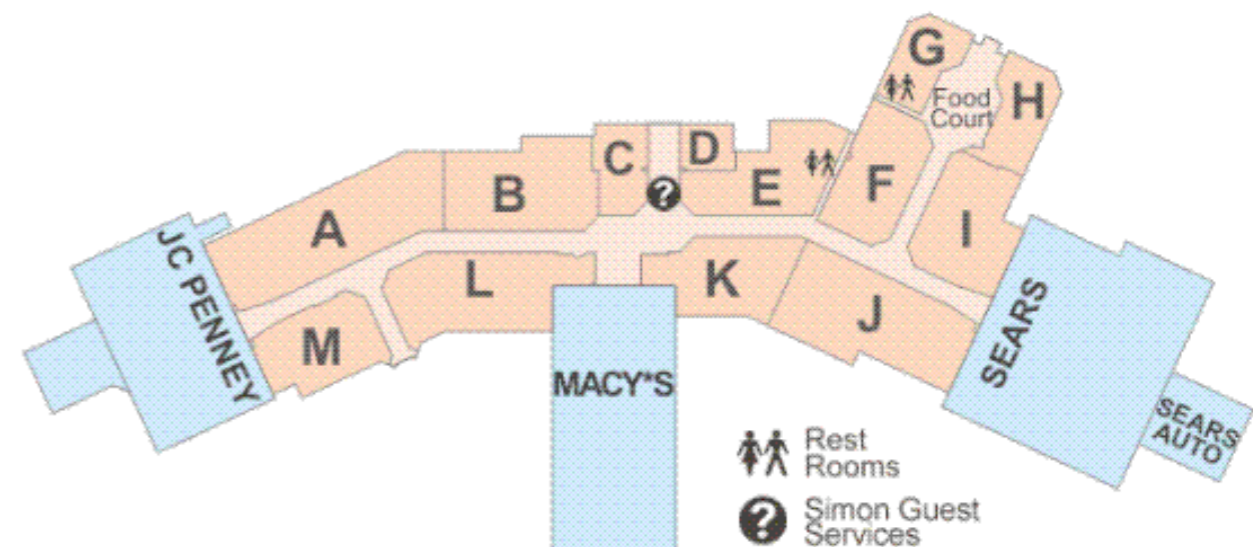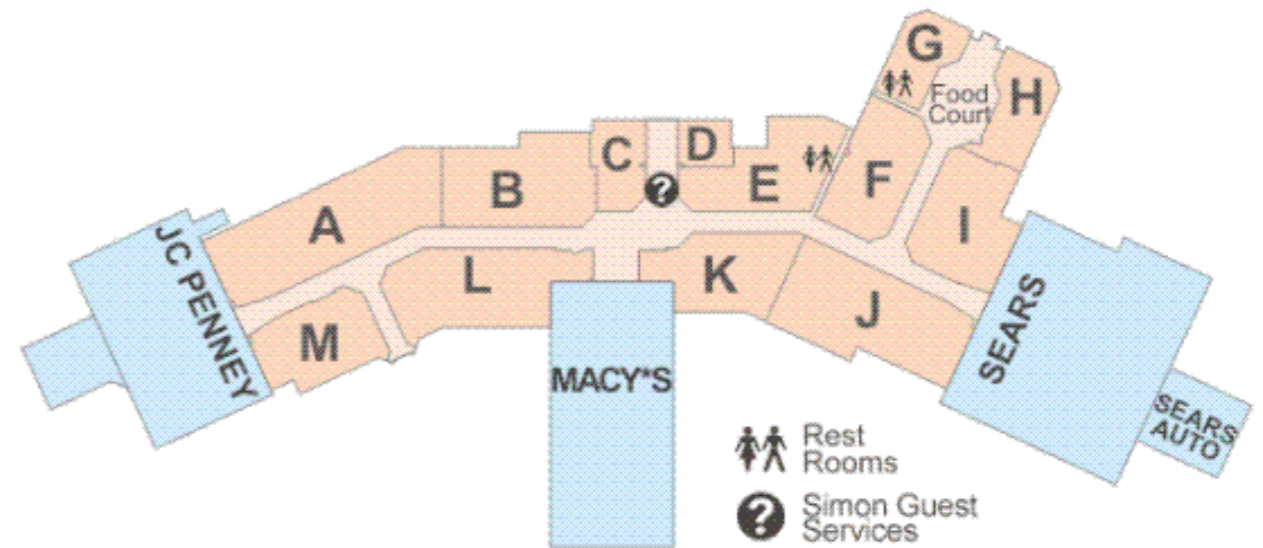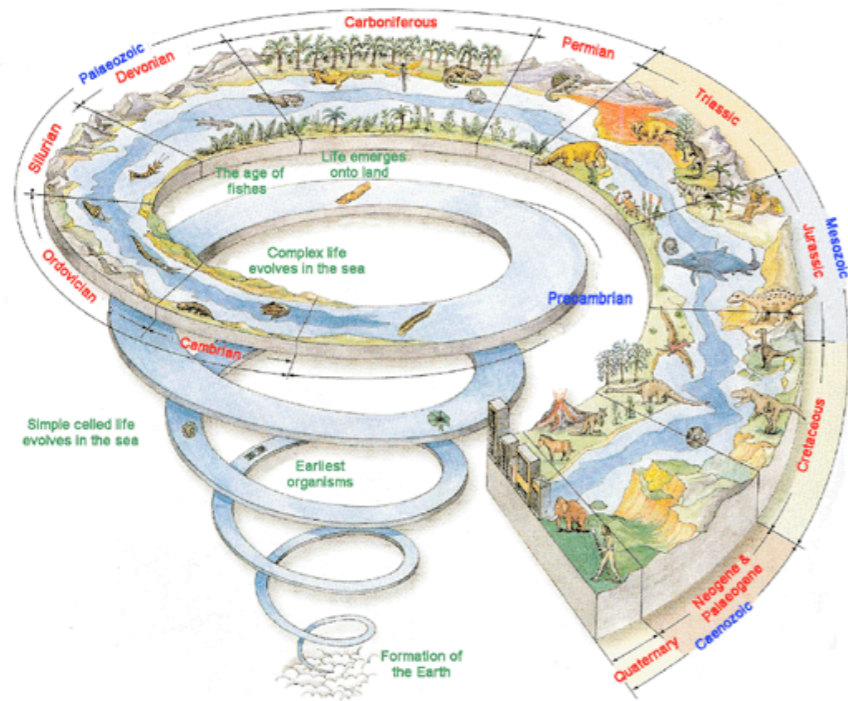
However, one can challenge the sort of analogy that the B-theorist wants to draw between time and space.

> 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.

from Arthur Prior, "Some free thinking about time"

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> 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.

from Arthur Prior, "Some free thinking about time"

One way of bringing out Prior's idea is to point out that there seem to be genuine asymmetries between past and present which have no obvious analogue in the case of space. This emerges especially clearly, he thought, when we think about the difference between some painful experience being in the future and being in the past. One might think that to capture this disanalogy one needs to believe in A-series properties.

Another way to argue that time and space are less analogous than the B-theorist thinks is to focus on the fact that time, unlike space, is **something that moves.** Our language for talking about time is full of metaphors that pick up on this: we talk about time flowing, or the passage of time. But according to the B-theorist, there can be no such thing as the movement or flow of time; hence this aspect of our experience of time must be an illusion.

However, here again the B-theorist has a response; and this is to point out that a plausible case can be made that the flow of time **must** be an illusion. After all, if time moves, there must be some speed at which it moves; but how could there be a speed at which time moves, since speeds are measured with respect to time?

Summing up: McTaggart gave us the following argument against the reality of time.

1. Nothing really has any A-series property.
2. If nothing really has any A-series property, then nothing exists in time.
_____
C. Nothing exists in time.

If one believes that things really do exist in time, then one must reject one of the premises of this argument. Two opposing views of time are defined in part in terms of **which** premise they reject.

The A-theorist rejects the first premise, and holds that events really do have A-series properties like being present. To defend A-theories, one must explain where McTaggart's argument that the A-series involves a contradiction goes wrong, and what it could mean to say that time flows.

The B-theorist rejects the second premise, and holds that the absence of A-series properties needn't count against the reality of time, which requires only B-series properties. To hold the B-theory, one must defend the claims that the B-theory can give an acceptable account of change, the sense in which time seems to move, and the (apparent) special status of the present.