**Time Passages**

It was late in December, the sky turned to snow

All round the day was going down slow

Night like a river beginning to flow

I felt the beat of my mind go

Drifting into time passages

Years go falling in the fading light

Time passages[[1]](#footnote-1)

**Abstract**

Temporal dynamists argue that we should believe that there exists temporal passage because there being passage is the best explanation for the presence of our temporal phenomenology. Some non-dynamists have countered that the presence of passage makes no difference to our temporal phenomenology, and consequently that temporal phenomenology cannot be evidence that there is passage. This paper attempts to bolster this non-dynamist response by offering new arguments for the claim that the presence of passage makes no difference to our phenomenology.

**1. Introduction**

Our experiences have a temporal aspect. First, our experiences have associated with them a *temporal phenomenology.* We experience events as having a temporal order, and being separated by a temporal duration. Perhaps in addition to experiencing a succession of events, we also have experiences of succession (Rashbrook 2012).

Cognitive neuroscience aims to tell us how we process and encode temporal information and build a picture of the world as consisting of temporally related events (Eagleman 2008, Arnold and Johnston 2003, Borst, and Euler 2011, Holcombe 2010). Such research more or less assumes that the world has (at least) minimal temporal structure—that, from a subject’s frame of reference there are temporally ordered events separated by a particular duration—and then asks how it is that our cognitive system encodes these temporal relations. It makes few, if any, assumptions about the content of our temporal phenomenology beyond that there exist temporally ordered events with temporal durations.

By contrast, philosophy aims to tell us—in part by appealing to cognitive neuroscience, physics, and metaphysics—both what the content of our temporal phenomenology is, and whether, and to what extent, that content is veridical. The match, or mismatch, between our temporal phenomenology, on the one hand, and the nature of time, on the other, is thought to be particularly pressing for the following reason. Many philosophers hold that the world is represented to us as being a certain way: that is, they hold that we have temporal phenomenology with a certain *content,* a content which represents that time flows, or passes. Let us say that according to these philosophers our temporal phenomenology is *as of* temporal passage. To say that we have experiences *as of* passage is to say that we have experiences with a certain content, leaving open whether or not there is any passage that these are experiences of: that is, leaving open whether these experiences are veridical or illusory.

If our temporal phenomenology is as of passage then our experiences represent *that time flows,* just as my current experiences of the room around me represent that it contains a chair, a lamp, and two dogs. And just as my experiences of the room are veridical only if the room contains a chair, a lamp, and two dogs, so too, if my temporal phenomenology has a content as of temporal passage, then that phenomenology is veridical only if there really is temporal passage. Therein lies the problem. Some philosophers, *temporal dynamists*,[[2]](#footnote-2) think that there is temporal passage. But many philosophers and physicists think there is not. Instead, they think that there is a static n-dimensional set of objects and events related by spatio-temporal relations, but that no set of those events is objective present past, or future. All events exist, and are equally real, and time is no sense passes: the manifold is static.

By contrast, temporal passage is modelled in various ways; but all models suppose that passage consists in there being a single moment that is objectively present, such that which moment that is, changes. Then each of us inhabits a metaphysically special moment—the present—and events earlier than now are in the objective past, and are becoming progressively more past as time passes, and events later than now are in the objective future, and are becoming progressively less future as they come towards us. This is why, say temporal dynamists, it seems to us as though time passes: because it does. The problem, however, is that temporally dynamical models of our world—models in which time passes—are significantly in tension with our best science. Temporal passage not only fails to feature in any physical theory, but the laws of nature are time reverse invariant. For our purposes these details don’t matter: what matters is that there are good (though defeasible) reasons, from empirical science, to think that time does not pass. In contrast, there are not (generally) good reasons from empirical science, to suppose that the room around me does not contain a chair, lamp, and two dogs. So if our temporal phenomenology really does represent that time passes, and if our best science is right and time does not pass, then we are subject to a massive and pervasive illusion. Alternatively, if in fact it seems to us that time passes, and if we have reason to think that this is not a massive illusion, then this gives us reason to be sceptical of our best science, since it gives us reason to suppose that there is temporal passage. That makes investigation of the connection between our phenomenology, on the one hand, and the nature of time, on the other hand, a particularly interesting and potentially fruitful investigation.

In the metaphysics of time arguments of the second kind proceed by supposing that our temporal phenomenology is as of passage, then inferring that given this, time is most likely a certain way, namely, that there is temporal passage. The aim of this paper is to undermine these arguments by arguing that even if it were true that our phenomenology is as of passage, the best explanation for this would not be that our world contains temporal passage. The paper aims to show that on any plausible view about what temporal passage consists in, either temporal passage would make no difference to our temporal phenomenology or, in a few rare cases, it would make a difference but the difference it would make would not be of the kind that would provide us with evidence that ours is a world with temporal passage. So even if our phenomenology does represent that there is temporal passage, that provides no evidence for there being temporal passage. I begin, in section 2, by laying out the argument I later attempt to undermine. Then, in section 3, I consider one set of responses to these arguments, and suggest that some will find them uncompelling. From section 4 onwards I outline various ways of modelling temporal passage, and argue, for each of these, that if temporal passage is as modelled, then our phenomenology would not be evidence for the presence of passage.

**2. Arguments for Passage, from Phenomenology**

The argument from temporal phenomenology is the most pervasive, and appealing, argument of its kind. It moves from premises about our temporal phenomenology, to conclusions about the nature of time.

*Argument from Temporal Phenomenology*

(a) We have experiences as of the passage of time.

(b) If we have experiences as of the passage of time, then any reasonable explanation for this relies on the passage of time being an objective feature of reality.

Therefore:

C: The passage of time is an objective feature of reality.[[3]](#footnote-3)

Those who accept (C) I call *temporal* *dynamists* (or just dynamists). Those who reject (C) I call *non-dynamists*.[[4]](#footnote-4) Typically, those who reject the argument from temporal phenomenology reject either (a) or (b) (rather than the inference from (a) and (b) to (C)). Those who reject (a) come in two varieties. *Veridicalists* accept that our phenomenology has representational content, but deny that that content is *as of* passage. (Torrengo (forthcoming); (Hoerl (2014)). *No-content* theorists hold that phenomenology itself is contentless. What is contentful is some complex combination of representational states that are liable to be infected by, *inter alia,* our views about the nature of time (Braddon-Mitchell (2013)).

This paper is principally interested in the second way to resist the argument from temporal phenomenology—rejecting (b). There are two strategies the non-dynamist has brought to bear in rejecting (b): *defensive* and *offensive*. The defensive strategy aims to show that the non-dynamist has a perfectly good explanation for our temporal phenomenology. I call those who embark on this defensive strategy, *illusionists.* Illusionists deny (b) but accept (a), and therefore hold much of our temporal phenomenology to be illusory since it represents something (passage) that does not exist (Callender 2008; Lee (2014), Mellor (1981, 1998), Paul (2010), Price (1996, 2011) and Skow (2011). Illusionists argue that our experiences as of passage can be explained without relying on passage. The defensive strategy, if successful, undermines our purported reasons to suppose that the presence of temporal passage is the *only* reasonable explanation for our phenomenology.

By contrast, the offensive strategy aims to reject (b) by showing that even if there is temporal passage, *its* *existence* does not provide a reasonable explanation for our temporal phenomenology. Defenders of the offensive strategy offer the following argument:

*Argument against the evidential role of temporal passage[[5]](#footnote-5)*

1. For temporal phenomenology to provide evidence of temporal passage, it must be that the presence of temporal passage makes a difference to our temporal phenomenology.
2. It is not the case that temporal passage makes a difference to our temporal phenomenology.
3. Therefore our temporal phenomenology provides no evidence for the presence of temporal passage.

If (iii) is true, then it follows that (b) is false: it cannot be that the presence of temporal passage is the only reasonable explanation for our temporal phenomenology if the presence of our phenomenology provides no evidence for the presence of temporal passage. (i) seems undeniable. So the crucial premise in need of defence is (ii). Extant arguments in support of (ii) are rooted in empirical claims. In the following section I outline a general form of such arguments, and suggest that some will not be swayed by such arguments. In the remaining sections I develop new arguments for (ii) that do not appeal to empirical considerations and which should be more dialectically persuasive because they show that, *by the lights of the dynamist herself,* our temporal phenomenology provides no evidence for the presence of temporal passage.

**3. Empirical Arguments for (ii).**

Empirical arguments for (ii) take the following form:

*Empirical Argument*

1. EMPIRICAL PREMISE
2. If EMPIRICAL PREMISE then temporal passage makes no physical difference to how things are.
3. Therefore, temporal passage makes no physical difference to how things are.
4. Anything that makes no physical difference to how things are makes no difference to our temporal phenomenology.
5. Therefore, if there is temporal passage it makes no difference to our temporal phenomenology

Different versions of the empirical argument differ only insofar as they plug in different claims to EMPIRICAL PREMISE. The details of these arguments really do not matter, though some notable versions are spelled out in the footnote below.[[6]](#footnote-6) As Baron (forthcoming) notes, the offensive strategy aims to undermine the evidential connection between our temporal phenomenology and the presence of temporal passage. Prior to having undermined that evidential connection, however, it seems reasonable to suppose that if we have a temporal phenomenology as of passage (as those who accept (a) but reject (b) suppose we do) then this phenomenology provides us with evidence of passage. Of course, if one’s credence in EMPIRICAL PREMISE is higher than one’s credence in the content of one’s phenomenology, then some version of the empirical argument will be effective. But those who give high credence to their phenomenology being as of passage—as many dynamists do—and somewhat lower credence to EMPIRICAL PREMISE—again, as many dynamists do—will find the argument unpersuasive because they will conclude that the argument gives them reason to reject EMPIRIAL PREMISE.

Like proponents of the offensive strategy, I aim to defend (ii): the claim that temporal passage makes no difference to our temporal phenomenology. But rather than appealing to an empirical premise, I argue that on any of the plausible models of temporal passage, temporal passage makes no difference to our temporal phenomenology (or makes the wrong kind of difference). Such arguments, if successful, show that by their own lights, temporal dynamists ought to reject the argument from temporal phenomenology.

**4. The Moving Present**

Since temporal passage consists in the movement of an objectively present moment, dynamists should hold that there is an important connection between the instantiation (and movement) of *presentness*, and the content of our temporal phenomenology. By ‘presentness’ I intend to pick out whatever it is in virtue of which a moment is objectively present. I do not assume that presentness must be irreducible or intrinsic. Given this, there are four categories of views one could have about presentness:

IQ: Presentness is an intrinsic qualitative property.

INQ: Presentness is an intrinsic non-qualitative property.

EQ: Presentness is an extrinsic qualitative property.

ENQ: Presentness is an extrinsic non-qualitative property.

Here, ‘qualitative property’ is not being used to pick out a property of experience—i.e. the higher-order property of what some experience is like. By ‘qualitative property’ I intend to pick out properties that make an *in principle observable, measurable, or experiential, difference to how things are,* while non-qualitative properties are those that make no in principle observable, measurable, or experiential, difference to how things are. Identity or haecceitistic properties are paradigmatically non-qualitative. They make a difference to how things are (with respect to identity facts) but that difference is not in principle observable or experiential. I assume that physical properties are those that are in principle observable or detectable through scientific methods and hence that they have causal efficacy. So if presentness is a non-qualitative property, then it is not a physical property.

In what follows I begin by dividing models of passage into *minimal* and *substantial*, where the former include models according to which passage involves the movement of a non-qualitative property, and the latter include models according to which passage involves the movement of a qualitative property. I then consider, for each, whether if passage were that way, it would make a difference to our temporal phenomenology.

**5. Minimal Passage Theories**

A world, *w*, is one in which there is minimal passage iff (a) there is an objective property of presentness in *w* and that property is non-qualitative and (b) the property of presentness moves.

Are there any minimal passage theories? Yes. One way to think of the moving spotlight view is as a minimal passage theory. Call such a version of the moving spotlight view a *traditional moving spotlight view* to distinguish it from a version I later introduce as *the non-traditional moving spotlight view*.

According to the traditional moving spotlight view there exists a four-dimensional block universe of events, objects and properties, ordered via B-relations into a B-series[[7]](#footnote-7) such that (a) for every object, event and property there is a fact of the matter where it is located/instantiated in the block, and what the space-time distance is between it and other events/objects/properties and (b) there is a fact of the matter regarding the trajectory of objects through space-time, and (c) there is a fact of the matter regarding the causal relations that hold between events in the block and (d) there is an objectively present moment (picked out by the ‘spotlight’) which moves, yielding an A-series ordering of events that mirrors the B-series ordering of events.

On this view the entire causal nexus and all the causal facts exist and are, from the perspective of *sub species aeternitatis,* fixed as part of the block. So far, that picture of the world is the same as that of the non-dynamist. In addition to these facts there is a dynamical feature—the moving spotlight—which ranges over the four-dimensional block, such that what it is for a particular time to be ‘lit up’ by the spotlight is for that time to be objectively present. When the very first moment of time is objectively present, any claim about future events, their causal connections, their spatio-temporal distances from one another, and their temporal orderings, is, either tenselessly true, or tenselessly false.

On one version of such a view, the arrival of presentness makes no qualitative difference to the time at which it arrives, and the departure of presentness makes no qualitative difference to the time from which it departs. Rather, presentness is like a moving temporal haecceity: a *nowness*. It makes a difference to the world by making it true that one particular moment and no other is now, but that is *all* the difference it makes.

It is also natural to read some growing block theorists as minimal passage theorists. According to the growing block view, time passes, and its passage consists in the gradual accretion of new moments, into a ‘growing block’ of reality. On such a view what makes a time, *t*, the objective present is that it sits at the end of the growing block looking into an abyss of nothingness. A moment ceases to be the objective present when a new moment comes into existence. If one holds that when *t* goes from being objectively present to being objectively past (because a new slice, *t*\*, is added to the block) *t* retains all (and only) the same qualitative properties—that is, if *t,* when it is objectively present, is a qualitative duplicate of *t* when it is objectively past—then this version of the growing block view, which I will call the *traditional growing block theory*, is a minimal passage model.[[8]](#footnote-8)

Finally, one could endorse a version of presentism that accepts minimal passage. According to presentism, the only objects and events that exist are those that exist in the present moment. Past and future events and objects do not exist. The presentist might think that presentness, then, is just existence. What marks the present out as the objective present, is that it, and only it, exists. But the presentist might concede that were past and future events to exist, the qualities that the present moment has, would be the same. That is, she might concede that adding in some past and future events and objects would not take away from the qualities of the present moment. In that case she thinks that presentness is a non-qualitative property. For if there existed past (or future) events and objects, and thus other moments, then this moment (which is present) would lack presentness since it would fail to be the only moment that exists. Nevertheless, this moment would have the same qualities it does actually. It is not clear whether there are any presentists who are minimal passage theorists. But there are certainly minimal passage theorists among those who defend the moving spotlight and growing block theories.[[9]](#footnote-9)

 Notice that it does not matter whether one is a physicalist or a dualist, nor which view of phenomenal content one subscribes to. If one is a minimal passage theorist it is impossible to escape (ii): it is not the case that temporal passage makes a difference to our temporal phenomenology. That is so, since by definition one way of making a qualitative difference is to make a phenomenal difference. Thus it follows that minimal accounts of passage are ones according to which passage makes no phenomenal difference since it makes no qualitative difference. So if passage is minimal it follows that our temporal phenomenology provides no evidence for the presence of temporal passage thus construed.[[10]](#footnote-10)

**6. Substantial Passage Theories**

So let us turn to consider substantial passage theories. A world, *w*, is one in which temporal passage is substantial iff (a) there is an objective property of presentness in *w* and that property is qualitative and (b) in *w*, the property of presentness moves.

There are four dimensions along which substantial passage theorists may disagree. They may disagree about whether or not there exist non-present moments; they may disagree about whether presentness is fundamental or derivative (it is fundamental if it does not supervene on any other properties, and derivative if it does) they may disagree about whether presentness is an intrinsic or an extrinsic property; and they may disagree about whether presentness is a physical property. Let us work through the different accounts of temporal passage derived by taking different views on these matters.

Let us begin by considering theories of passage according to which presentness is *intrinsic*—and hence is an intrinsic *qualitative* property.

**6.1 Intrinsic Qualitative Presentness**

Suppose one thinks that presentness is an intrinsic property. What view of temporal ontology is one likely to endorse? Well, one *could* be a presentist or a growing block theorist. But neither of these models sits well with the idea that presentness is intrinsic. Why so? Well, the growing block theorist thinks that the objectively present moment is the one *at the end of the block*. But being at the end of the block is surely a relational matter. So if that is what presentness consists in, it would be odd (though perhaps not incoherent) to suppose that presentness is intrinsic. Likewise, what characterises presentism is not the claim that these things exist, but rather, the claim that these are the *only* things that exist, and that is an extrinsic property. So it is natural to suppose that either view of temporal ontology fits better with the idea that presentness is an *extrinsic* property, and these models will be considered in section 7.[[11]](#footnote-11)

 Having set aside presentism and the growing block theory, the only candidate left is a version of the traditional moving spotlight view.[[12]](#footnote-12) Recall that traditional moving spotlight views are those in which there exists a fixed four-dimensional block universe of events, objects, and causal relations, such that presentness ranges across that fixed block. So facts about what causes what are timelessly true. The version of this view we discussed in the previous section was one in which presentness is a non-qualitative property. Here, we want to consider a version according to which it is a qualitative property. On such a view the ‘light’ of presentness is a property that ranges across the four-dimensional block, making a qualitative (rather than merely haecceitistic) difference to the time that instantiates it.

Notice, though, that even though presentness thus understood makes a qualitative difference to the time that instantiates it, once presentness moves on, so too does that difference move on. The metaphor of the moving spotlight nicely captures this view of temporal passage. Presentness lights up the time that instantiates it. But that time is, qualitatively, the very same way after presentness leaves it, that it was before presentness arrived at it. This means that presentness, instantiated at *t*, cannot leave a record of itself at *t*, or at later time, by propagating forward some effect of its instantiation. So the instantiation of presentness by a time leaves no causal trace.

Below is an argument that on this view of temporal passage, passage makes no phenomenal difference.

*Causally Inefficacious Spotlight Argument*

1. Temporal passage makes a difference to our temporal phenomenology only if temporal passage bears appropriate causal relations to some of our mental states M1…Mn upon which our temporal phenomenology supervenes.
2. M1…Mn can only be appropriately causally connected to the existence of temporal passage if the instantiation of presentness is causally efficacious.
3. According to the traditional moving spotlight view presentness ranges across a four-dimensional block of events whose causal relations are, tenselessly, fixed.
4. If presentness ranges across a four-dimensional block of events whose causal relations are, tenseless, fixed, then presentness is not causally efficacious.
5. Therefore, according to the traditional moving spotlight view temporal passage makes no difference to our temporal phenomenology.

Clearly, the weight of the argument rests on premise (1). Why think (1) is true? First, it seems plausible that our temporal phenomenology is at least *quasi*-perceptual. By this I mean that many of the features of our temporal phenomenology are shared by paradigmatic perceptual experiences (even if some features are not). Our temporal experiences seem to involve the presentation as of mind-independent features of the world (distinct from features of our experience) and the character of our temporal phenomenology involves the presentation of certain features of the world in such a way that that character is immediately responsive to the character of the objects presented in experience. That is, it seems as though our phenomenology is immediately responsive to the things in the world that it presents or represents. This is by contrast to, say, our experience of imagining a blue cow, which does not seem to be perceptual in any of these ways. The defender of the argument from temporal phenomenology surely ought to concede this, since she thinks that the content of said phenomenology is as of temporal passage. Since passage had better be something out in the world, it must be that our temporal phenomenology is quasi-perceptual if it is to play the role required of it in the argument from temporal phenomenology.

 It is typically supposed that the content of perceptual states is at least in part a function of to what those states are causally connected; in particular, which states of the world typically cause those perceptual states.[[13]](#footnote-13) Given that our temporal phenomenology is quasi-perceptual it is plausible that its content is at least in part determined by the causal connections between some representational mental states and states of the world. Exactly what form that connection takes will not matter for my purposes, but for simplicity I will assume that the content of our temporal phenomenal states supervenes on (or is in some other manner determined by) the content of (some of) our representational states, and, in turn, the content of *those* representational states is determined, at least in part*,* by to what those mental states are typically causally connected.[[14]](#footnote-14) Thus the content of our temporal phenomenal states is, at least derivatively, partially the result of the obtaining of causal connections between our mental states and states of the world. This is to reject the claim that the content of our temporal phenomenology (or any other quasi-perceptual state) is intrinsic.[[15]](#footnote-15) Let us call the claim that for any quasi-perceptual state, S, that state has the content it does at least in part in virtue of the causal relations some state (or states) S\* bears to states of the world, where S supervenes on S\* the *necessity of causation for quasi-perceptual content* (NCQC). If NCQC is true, then (1) (above) is true.

Notice that it does not follow from NCQC that if there is no temporal passage, our phenomenology is *not* a phenomenology as of passage. We can have a phenomenology with the content as of stripy elephants even though there are no stripy elephants because (roughly) our phenomenology supervenes on a set of mental states that do bear appropriate causal connections to stripy-ness and to elephants. If some analogous story can be told in the case of temporal phenomenology then it may be that our phenomenology is as of passage, and yet that phenomenology is systematically illusory (as illusionists suppose). But that is not how the defender of the argument from temporal phenomenology supposes things to be. If NCQC is true, and if our phenomenology *is* as of passage, and if temporal passage exists, but there fails to exist the relevant causal connections between passage and our mental states, then it turns out that our phenomenology is illusory. If that were how things were it would be analogous to a case in which each of us has a phenomenology as of a pink elephant and, by chance, on every such occasion there really is a pink elephant present, but that pink elephant is not causally connected to any of our (relevant) mental states. In such a case our pink-elephant phenomenology would not be evidence for the presence of pink elephants.[[16]](#footnote-16)

 The dynamist might respond by rejecting NCQC and thus (1). She might maintain that our temporal phenomenology is partly constituted by (or supervenes on) the property of presentness that is instantiated at a particular time, so that our phenomenology of passage has the character it does in virtue of presentness being part of the relevant supervenience base. In response, here is an amended version of the argument that does not require the truth of NCQC:

*Amended Causally Inefficacious Spotlight Argument*

* 1. Temporal passage makes a difference to our temporal phenomenology only if it makes a physical difference to the way the world is.
	2. Temporal passage makes a physical difference to the way the world is only if at least some of the properties that constitute temporal passage are causally efficacious.
	3. According to the traditional moving spotlight view presentness constitutes temporal passage
	4. According to the traditional moving spotlight view presentness ranges across a four-dimensional block of events whose causal relations are, tenselessly, fixed.
	5. If presentness ranges across a four-dimensional block of events whose causal relations are, tenseless, fixed, then presentness is not causally efficacious.
	6. Therefore, according to the traditional moving spotlight view temporal passage makes no physical difference to the way the world is.
	7. Therefore, according to the traditional moving spotlight view, temporal passage makes no difference to our temporal phenomenology.

1.1 is true if and only if physicalism is true; it doesn’t require the truth of NCQC. Exactly what it takes for physicalism to be true is a vexed issue. Plausibly, however, temporal passage as described by the traditional moving spotlight theorist is constituted by non-physical qualitative properties. After all, the properties in question are undetectable by any method of the physical sciences and there seems to be no reason to suppose that such properties would figure in any physical theory (i.e. that they might be posited despite not being in principle detectable).

My assumption, going forward, is that physicalism is true. Without making a physical difference, temporal passage cannot make a difference to our temporal phenomenology. Again, a defender of the argument from temporal phenomenology might reject physicalism and hence 1.1 She might hold that temporal passage involves the instantiation of non-physical properties and that these non-physical properties are part of the supervenience base of some of our mental states, and are difference-makers with respect to the content of those mental states.

This is not the place to argue for physicalism. Indeed, some defenders of the argument from temporal phenomenology might take themselves to have independent reason to think that our mental states supervene on (*inter alia*) non-physical properties, since they find themselves unable to see how the phenomenal character of mental states could be entailed by the existence and arrangement of physical properties.[[17]](#footnote-17) It is worth noting, however, that it is not clear that the non-physical properties that constitute presentness (were there such properties) would be ‘gap plugging’ properties. So the need to plug the gap would not provide independent reason to posit these *particular* non-physical properties. Of course, one might think that once one has posited non-physical properties to fill the explanatory gap, positing a few more is no real cost. There is not space, here, to argue against such a view, and in which follows I assume, without further argument, both that (a) physicalism is true and (b) temporal phenomenology is quasi-perceptual and hence NCQC is true. Throughout, however, I will make clear where these assumptions are being made and hence where the dynamist might resist the arguments.

 Perhaps, then, the moving spotlight theorist needs an account of passage in which facts about how things are, at each time in the block, are not fixed independent of the movement of presentness. Non-traditional versions of the moving spotlight view embrace this idea. So it is to these that I now turn.

**6.1.1. The Non-traditional Moving Spotlight**

At their most abstract, non-traditional moving spotlight theories suppose that when presentness arrives at a time, *t*, it changes *t*’s qualitative properties, and those qualitative properties *remain the same thereafter.* One could conceptualise this view as a sort of ‘growing glow’. The glow is presentness; as it moves ever forward, it lights up a time (the objective present) thus changing its qualitative properties. Once the glow arrives, it never leaves, insofar as the *change* that the glow makes to the qualitative properties of the time at which it arrives, remain. So the glow grows four-dimensionally: past times stay glowing, future time are as, as yet, unglowing. Now we can ask a question about these future times: what properties obtain at these times? One possibility is that there is some, determinate, way things are at a future time, *t*, and which way that is, changes when presentness arrives. So *t* goes from being qualitative way Q, to being qualitative way Q\*. This, however, is an unappealing model. Consider the following claim, made at *t*\* when *t*\* is present: ‘at *t*, P’. When *t*\* is present, future time *t* exists, and bears witness to P. So the assertion is true. But now suppose that as presentness moves on, it arrives at tand one of the things it does it make P false. Then ‘at *t*, P’ uttered at *t*\*, becomes false. Many hold that tensed sentences change their truth-value over time. Everyone thinks that ‘tomorrow, it will rain’ might be true at some contexts of utterance and false at others. And some think that ‘at *t*, P’ can go from taking no truth-value at all, to taking a particular truth-value. But no one thinks that ‘at *t*, P’ ought to change from taking one truth-value, to taking another. Moreover, if we assume that some future times have persons with mental states at them, then at *t,* an utterance of ‘at *t*\*, Q’ can be true (when the earlier time, *t*\*, is still objectively future relative to the glow) and subsequently false (when *t*\* is post-glow). It is arguably even worse that utterances about earlier times can go from being true, to being false (or *vice versa*).[[18]](#footnote-18)

 To my knowledge no one has defended such a model of temporal passage, no doubt in part because it inherits these problems. So perhaps such a view would get the desired result—temporal passage of this kind would make a difference to our phenomenology—but the model is independently unattractive. One way around these problems is to suppose that there is no determinate way things are at future times. Thus, ‘at *t,* P’, uttered at *t*\* when *t* is future, simply takes no truth-value. Such utterances go from being neither true nor false, to having a determinate truth-value when presentness reaches the relevant time. It is something like this view that Skow (2011) defends, according to which presentness *makes determinate* the properties of the time it reaches, and then leaves those properties fixed thereafter. Since this model does not fall foul of the problems just articulated, it is the only version of the non-traditional moving spotlight view I will discuss.

Presentness is certainly a difference-maker on this view. Whether it is a causal difference-maker is less clear. If it is non-causal then such a view of passage is inconsistent with the truth of NCQC: the mental states upon which our temporal phenomenology supervenes cannot be appropriately causally connected to the movement of presentness (and hence to temporal passage). But since there is scope to argue that we should understand such processes as causal (but simply as cases in which cause and effect are not temporally separated (see Baron and Miller (2015) for discussion) I set this response aside.

It also seems as though the movement of presentness is a physical difference. Though it would be in principle impossible to observe the collapse into determinacy, one could have reason, from physical science, to suppose that there is such indeterminacy. So, on the face of it, this non-traditional moving spotlight model of passage renders (ii) false: temporal passage does make a difference to our temporal phenomenology by making a physical (and hence qualitative) difference to how things are.

When we ask whether the presence of passage makes a difference to our phenomenology we are asking whether, in the absence of passage, our phenomenology would have been different. So we are asking what things are like in the closest world to ours, in which there is no passage. Suppose ours is a Skowian moving spotlight world. What is the closest world to ours that lacks temporal passage? One possibility is that it is a block universe world that is a duplicate of each moment in our world *prior* to that time becoming present: thus it is a world in which every moment is indeterminate. In such a world there are no conscious states. So if that is the closest world to ours, which lacks passage, then the counterfactual “in the absence of passage, our phenomenology would have been different” comes out as true, and (ii) comes out as false. The difference temporal passage makes is not a difference in the *character* of our phenomenology, but rather, to whether we have phenomenology *at all*.[[19]](#footnote-19) But if, in the absence of temporal passage, there is no phenomenology at all, then the dynamist is best thought of not as offering the Argument from Temporal phenomenology, but rather, as offering the below Argument from Conscious Experience. For it is not that she thinks that it is the character of our phenomenology (i.e. its being as of passage) that argues in favour of the existence of passage, but rather, the fact that we have any phenomenology at all is what agues in favour of passage.

*Argument from Conscious Experience*

(A) We have conscious experiences

(B) If we have conscious experiences, then any reasonable explanation for this relies on the passage of time being an objective feature of reality.

Therefore:

C: The passage of time is an objective feature of reality.[[20]](#footnote-20)

Now, the following is certainly true: conditional on ours being a Skowian world, the following counterfactual is true: in the absence of temporal passage, we would have no phenomenology. But is *that* a reason to think the Argument from Conscious Experience is a good one? No. For we have been given no reason to suppose that ours is a Skowian world. From the fact that, *if our world* is a Skowian moving spotlight world, then in the absence of temporal passage we would have no phenomenology, it hardly follows that supposing our world to be a Skowian world is the only reasonable explanation for our phenomenology. Conditional on our world being one in which our phenomenology is the result of tiny gremlins jumping up and down in our brain, the closest world that lacks those gremlins is likely one in which we have no phenomenology. But that doesn’t mean that the only reasonable explanation for us having phenomenology is the presence of tiny jumping gremlins. So we have no reason to accept (B). So although the non-dynamist must concede that if our world is a Skowian world, the presence of temporal passage does indeed make a difference to our temporal phenomenology, she should nevertheless maintain that the mere fact that we have phenomenology gives us no reason to suppose that we are in Skowian world. It gives us no reason to suppose that actually, there is temporal passage.

 Moreover, perhaps the closest passage-less world to the Skowian world is one in which every moment is a duplicate of a time in our world *after* presentness has arrived. If so, the presence of temporal passage makes no difference to the *character* of our temporal phenomenology (*nor to its existence*). Here is the argument for that conclusion:

*Moving Spotlight Duplication Argument*

1. Our world, @, is a Skowian moving spotlight world.
2. There exists a block universe world, B, in which there is a bijection of times from B to @ such that (a) every time, *t,* in B is a qualitative duplicate of a time, *t*\*, in @ *after* presentness has arrived at *t\** in @ and (b) the B-series ordering of events in B is the same as the B-series ordering of qualitative duplicate events in @.
3. B is the closest world to @ in which there is no temporal passage.
4. Each time in B is a phenomenological duplicate of the time in @ of which it is a qualitative duplicate.
5. Therefore the phenomenology in B is the same as in @.
6. There is no temporal passage in B.
7. Therefore, in the absence of temporal passage, our temporal phenomenology would be the same.
8. Therefore, the presence of temporal passage makes no difference to our temporal phenomenology.[[21]](#footnote-21)

The premises most likely to be rejected by the defender of the argument from temporal phenomenology are (2) and (3). The dynamist might reject (2) by arguing that the duplication is impossible because the only way to duplicate our actual phenomenology is via temporal passage. Thus B is impossible. In that case the closest possible world to @, which lacks temporal passage, will be a world that is qualitatively, and hence phenomenologically, different from @, and so the presence of temporal passage makes a difference to our temporal phenomenology. I see, however, no reason to suppose that B is impossible. On this model of passage, the movement of presentness consists in the making determinate of what exists at locations (times). It is a strong claim indeed to suppose that it is *impossible* for qualitative duplicates of what determinately exists at those locations to exist, without it ever having been *indeterminate* that they exist, and then made determinate by the passage of time. Surely modal space is not so constrained. (If it were, one could respond to any sceptical argument by rejecting the idea that there could be, say, a phenomenology as of there being an external world in the absence of there being such a world).

Alternatively, the dynamist could reject (3). But then the closest relevant world to @ would be a world in which all the events in the block are indeterminate, and we are back where we started, with the dynamist defending the Argument from Conscious Experience.

 In conclusion, then, the Skowian moving spotlight view commits one either to defending the Argument from Conscious Experience, and failing, or to defending the Argument from Temporal Phenomenology, and failing. In either case, the presence of our phenomenology does not provide evidence for the existence of passage thus understood.

 So that brings us to our final task: considering theories of passage according to which presentness is an *extrinsic* qualitative property.

 **7. Extrinsic Qualitative Presentness**

The view that presentness is an extrinsic property is motivated by the thought that part of what makes a moment the present has something to do with what is going on, or not going on, at other moments. One might think that a crucial feature of presentism is not simply that the present moment instantiates presentness, but that what it is for it to instantiate presentness is for earlier and later moments to fail to exist. Likewise, one might think that what makes a moment the present one in a growing block world is the fact that it is the latest moment in the block: there fail to exist any later moments. If presentness is extrinsic, then this opens up the possibility of further models of temporal passage.

 We have seen that traditional growing block theories—according to which when *t* goes from being objectively present to being objectively past *t* retains all (and only) the same qualitative properties—sustain only *minimal* passage and so are unable to reject (ii). By contrast, non-traditional growing block models hold that when a moment comes into existence it instantiates presentness, and the qualitative features of that moment change when it goes from being present, to being objectively past. In its most abstract we can think of this as the view that each moment comes into being glowing—the glow of extrinsic presentness. As time passes, that moment loses that extrinsic property—since the property supervenes, in part, on there being no later moments—as new moments (objects and events) come into being at the end of the block. Thus the moment loses its ‘glow’ of extrinsic presentness when it becomes part of the objective past.

The presentist might say something similar. According to such a view, the present moment has the qualities it does in part in virtue of instantiating an extrinsic property of presentness—a property whose instantiation supervenes (in part) on the fact that no future or past moments (events or objects) exist. Since little hangs on the difference between presentism and the growing block model with respect to the movement of extrinsic qualitative presentness—since in each case it is the absence of some events, objects, and times that is relevant—for simplicity I will evaluate models of temporal passage of this sort in the context of the growing block model. Nothing substantive hangs on that choice.

 What sort of difference does extrinsic presentness make? One possibility is that it makes the difference between there being phenomenology at *t,* when *t* is present, and there being no phenomenology at *t*, when *t* is past. Such a version of the growing block model is defended by Forrest (2004; 2006), who holds that what sets the present apart from the past is the presence of incomplete causal processes in the present. Something’s being an incomplete causal process is an extrinsic matter: it depends on the existence of causes that lack effects. Further, there are qualitative properties that supervene only on incomplete causal processes: according to Forrest, phenomenal states are like this. Thus the instantiation of presentness, at a time, makes a qualitative difference to that time. If ours is a Forrest world, the closest world to ours, which lacks temporal passage, will be one that lacks phenomenology altogether. That world will be a block universe that is intrinsically like the Forrest world once the Forrest world has stopped growing—once time has stopped passing, and it has fully grown. In the block world, however, no time will instantiate the extrinsic property of presentness, nor will any time *ever* have instantiated such a property. But if extrinsic presentness is required for phenomenology, then the block world will be one in which there is no phenomenology. So if ours is a Forrest world, then temporal passage makes a difference to our phenomenology, since in the closest world to ours, that lacks passage, there is no phenomenology.

 Notice that this view is, like one we met earlier, committed to the Argument from Conscious Experience rather than the Argument from Temporal Phenomenology. It is not the fact that our phenomenology has a certain character that should lead us to think that there is passage, but rather, the fact that we have phenomenology at all. And, again, the response here is the same as the one we met earlier. Namely, the fact that conditional on ours being a Forrest world, the presence of passage makes a difference to our phenomenology (namely its presence) does not give us reason to suppose, on the basis of our having phenomenology, that ours is a Forrest world. The Argument from Conscious Experience is not compelling. Though Forrest stipulates that in a Forrest world consciousness supervenes on incomplete causal processes, we have no independent reason to suppose consciousness supervenes in this manner, in our world. So we have no reason to suppose that the best explanation for *our* having phenomenology is our world being a Forrest world.

 Suppose we imagine a different version of the non-traditional growing block view, according to which our phenomenology as of passage supervenes on extrinsic presentness. When a time goes from instantiating extrinsic presentness, to failing to instantiate extrinsic presentness, that time changes from being one in which phenomenology is as of passage, to one in which phenomenology is not as of passage. We have to imagine this view because, as far as I know, no one has defended such a view. Still, it seems as though the view offers what the dynamist needs. The closest world to such a world will be a block world with the same intrinsic properties, but in which there is no accretion of times, and hence no extrinsic presentness. So the phenomenology present in such a world will be somewhat like ours, except that individuals in that world won’t have phenomenology as of passage: their phenomenology will have some other character. So (ii) is false: temporal passage does make a difference to our phenomenology, indeed, it makes it the case that our phenomenology is as of passage rather than as of something else, for in the closest world to this, which lacks passage, there is no phenomenology as of passage. Let us, then, evaluate this view further.

 Suppose that a defender of temporal passage, conceived in this way, is in an argument with a non-dynamist. The latter holds that either (a) our phenomenology is as of passage, and that phenomenology is systematically illusory or (b) our phenomenology is not as of passage, but is veridical phenomenology with some other content. The former holds that (c) our phenomenology has a veridical content as of passage. Assuming the *necessity of causation for quasi-perceptual content* (NCQC), it follows that (c) is true only if our phenomenology has, amongst its supervenience base, mental states that are causally connected to the instantiation of (extrinsic qualitative) presentness.[[22]](#footnote-22)

 So could we have reason to suppose that (c), rather than (a) or (b), is true? Well, causes are the bearers of information about the time at which they occur. When we receive information about some non-present time, we receive information about how that time is, *when it is present*. There is, as it were, no scope for a time to first send out information about what it is like (by sending our causally propagated signals) and then, later, send out new signals once that time is in the objective past. Moreover, we know that the information we receive about times that are now past must have been sent when that time was present, because we have memories of having a phenomenology as of passage. But if our memorial states were caused by events when those events are objectively past then we would have no such memorial states, because in the past, our phenomenology is not as of passage (it is as of something else).

 So it is, in principle, impossible to compare what a time is like, when it is present, with what a time is like, when it is past. So it is in principle impossible, through any scientific method, to determine whether our world instantiates an extrinsic property of presentness since we cannot detect the absence of the relevant objects/events/times that form part of the supervenience base of that property. In turn, it is in principle impossible, through scientific method, to determine whether, by instantiating extrinsic presentness, a moment thereby instantiates phenomenal properties that it would otherwise lack. But that leaves the dynamist in a bind.

If we had good reason to suppose that ours is a world in which extrinsic qualitative presentness is instantiated (and moves) then we would have good reason to suppose (c) to be true: to suppose that our phenomenology is as of passage (and is veridical). After all, our mental states would (we can suppose) be appropriately causally connected to the instantiation of said extrinsic presentness. But if we had such reason, then any argument for passage on the basis of our phenomenology would be both circular and redundant. On the other hand, if we want to *argue* for passage (understood as an extrinsic qualitative property) on the basis of our phenomenology we need some reason to think that (c) is a better hypothesis than (b). But in the absence of some independent evidence for the existence of an extrinsic property of presentness, we have no reason to think our phenomenology *is* as of passage. Why so?

Recall our earlier assumption about the content of phenomenology: namely that the content of any quasi-perceptual phenomenal state is, at least in part, the product of causal connections between certain mental states (upon which our phenomenology supervenes) and states of the world. This is the assumption that NCQC is true. This is important because it means that we cannot determine, by introspection alone, the content of our temporal phenomenology. If quasi-perceptual content is a function of (*inter alia*) the causal relations between our mental states and the world, then in the absence of knowing *something* about to what our mental states are typically causally connected, we cannot determine the content of our quasi-perceptual states. That means we cannot tell, by introspection alone, whether (a), (b), or (c) is the case.

Now if we had independent reason to suppose that ours is a world with extrinsic presentness, then we would have good reason to suppose that (c) is true. But we do not; quite the reverse, the dynamist aims to give us reason to think our world has extrinsic presentness, by appealing to the character of our phenomenology. Yet even in this rare case in which we find a model of temporal passage in which, were our world as described, the existence of temporal passage would make a difference to the character of our temporal phenomenology, we still do not have reason to suppose that the existence of our temporal phenomenology provides evidence that our world contains passage thus described. For the properties of extrinsic presentness turn out to be in principle undetectable, and so now we are in position where we ought to doubt whether our phenomenology really is as of passage or not. That is, we can only be confident that our phenomenology is as of passage if we are confident that our world contains extrinsic presentness. We cannot, therefore, use the existence of the former, to argue for the existence of the latter.

8. Conclusion

I have argued that for any of the plausible models of temporal passage, if temporal passage is as described by those models then the presence of our temporal phenomenology provides no evidence for the presence of passage thus understood. Thus by the dynamists’ own lights, she should reject the argument from temporal phenomenology. One might wonder where that leaves us. If temporal passage would make no difference to our temporal phenomenology, were they any passage, then why is our phenomenology quasi-perceptual, and why does it seem to have content as of passage? This is not the place to address these important questions in any detail. One strategy is to suppose that we are subject to pervasive error: it does seem to us that time passes, though times does not pass, and to explain the source of that error by appealing to the workings of certain cognitive mechanisms (a la Paul 2010). For my part, I think the better strategy is simply to deny that our phenomenology is as of passage. Rather, the arguments of this paper provide good reason to think that the content of our phenomenology does not (falsely) represent that there is passage, but rather, (truly) represents other temporal properties and relations, which we mistakenly describe as being a representation as of passage. Determining which of these is the preferable view must, however, be left for another day.

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1. Time Passages, words and lyrics by Al Stewart. The notable feature of these lyrics is the ambiguity in whether the phenomenology in question is the result of time passaging (i.e. passing) or the result of there being passages in time, through which we, in some sense, move. [↑](#footnote-ref-1)
2. Also known as A-theorists. [↑](#footnote-ref-2)
3. Proponents of an argument of roughly this form include Bourne (2006, pp. 15–16), Craig (2000, p. 138), and Williams (1951, pp. 465–466). The argument is presented in this form in, Baron, Cusbert, Farr, Kon and Miller (2015). [↑](#footnote-ref-3)
4. There are other, weaker, arguments of this kind that aim to conclude, on the basis of our temporal phenomenology, that there is *prima facie* reason to prefer a theory according to which there is genuine passage. Still other arguments aim to show that, on the basis of our temporal phenomenology, that there is an explanatory burden that the non-dynamist incurs, that the dynamist does not. This paper focuses on the Argument for Temporal Passage, but much of what I say will hold, *mutatis mutandis*, for these weaker sorts of arguments. [↑](#footnote-ref-4)
5. Versions of this argument are to be found in (Price 1996 pp. 14-15 and Prosser 2000, 2007, 2012, 2013). [↑](#footnote-ref-5)
6. *Argument from physical science*

	1. Temporal passage will not show up in any description of the world offered by the physical sciences.
	2. If temporal passage will not show up in any description of the world offered by the physical sciences, then it makes no physical difference to how things are.
	3. Therefore, if there is temporal passage, it makes no physical difference to how things are.
	4. Anything that makes no physical difference to how things are makes no difference to our temporal phenomenology.Therefore, if there is temporal passage it makes no difference to our temporal phenomenology.

An argument of something like this form is found in Price (1996); Price (2009) and Prosser (2007)

*Argument from time-reversed Doppelgängers*

	1. It is physically possible that for every time-slice of our universe from the big bang until some time, t, into the future, there exists a physical duplicate of each of those time-slices, such that those time-slices are arranged, from the other temporal end of the universe, in the reverse temporal order to the temporal order they are arranged in at this end of the universe.
	2. Therefore it is physically possible that for any person, P, who exists at this end of the universe, there exists a time-reversed Doppelgänger, D, of P, where such a Doppelganger is something all of whose time-slices are physical duplicates of those of P, differing only in that the time-slices are arranged in the reverse temporal order to those of P.
	3. Temporal phenomenology supervenes on the distribution of physical properties at times.
	4. The supervenience base of D’s phenomenology is the same as that for P (from 2, 3)
	5. Therefore D has the same phenomenology as P (3, 4).
	6. If there is temporal passage, D’s temporal slices are ordered in the opposite temporal direction relative to the movement of passage than are those of P.
	7. Therefore, if there is temporal passage it makes no difference to temporal phenomenology. [↑](#footnote-ref-6)
7. I assume that if there is temporal passage there is a single correct B-series ordering of events (though in the case of a block universe in which special and general relativity are true, we would typically suppose there to be multiple B-series) since in any world with passage there must be a single B-series ordering of events that mirrors the A-series ordering. [↑](#footnote-ref-7)
8. Again, there are reasons to find this view attractive insofar as it allows one to appeal to the way things are, in the objective past, as truthmakers for past-tensed statements. After all, if the way things are, at t, when t is the objective past, is *not* the way they were when t was the objective present, then for some range of past-tensed statements about events at t, the way things are, at t, when t is the objective past, will not provide truthmakers for those statements. [↑](#footnote-ref-8)
9. Indeed, there are advantages to holding a traditional version of the moving spotlight or growing block theories. Neither have any difficulty providing straightforward truthmakers for past (or future) tensed statements, since what a time is like, qualitatively speaking, in the objective past, is just what it is like when it is objectively present. Thus the way things are, in the past, can serve as the truthmaker for (true) past-tensed statements, since the way things are, in the past, bears witness to the way things were, when that past time was present. [↑](#footnote-ref-9)
10. On the assumption that (i) of the argument against the evidential role of passage is true, as we are here supposing. [↑](#footnote-ref-10)
11. For an extensive discussion of possible versions of presentism that take presentness to be an intrinsic property, and associated arguments that temporal passage, thus construed, fails to make a difference to our temporal phenomenology, see Loo and Miller (forthcoming). [↑](#footnote-ref-11)
12. Notice one could have a version of the growing block view that incorporates these features, but it is not the most obvious candidate. If presentness is intrinsic and fundamental, then the question arises as to why it is the last slice in the block that instantiates that property, given that the property of being the last slice in the block is an extrinsic one. Such a view would leave it mysterious what the connection is between the extrinsic property of being the last slice in the block, and the intrinsic fundamental property of presentness. [↑](#footnote-ref-12)
13. Of course different accounts incorporate additional features; but most agree that causation is necessary. [↑](#footnote-ref-13)
14. If you suppose that causal connections obtain directly between phenomenal states and the world, then that will also do just fine for my purposes. [↑](#footnote-ref-14)
15. Not everyone accepts representationalism even in this limited form. See for instance Horgan and Tienson (2002) and Kriegel (2008) and Kriegel and Horgan (forthcoming). [↑](#footnote-ref-15)
16. Unless we also knew some higher-level facts, such as that there is the constant conjunction between the two, even though one is not the cause of the other. But no such suggestion is being made by the defender of the argument from temporal phenomenology. [↑](#footnote-ref-16)
17. See for instance Chalmers (1996) as an exemplar of a dualist with these motivations (though not as an exemplar of a temporal dynamist). [↑](#footnote-ref-17)
18. One could resist this by holding that there are no future mental states: presentness brings mental states into being. Even so the view has significantly problems. [↑](#footnote-ref-18)
19. This is Maudlin’s (2002; 2007) view. [↑](#footnote-ref-19)
20. Though Forrest (2004; 2006) does not explicitly present this argument, he does argue for (B). Since (A) is surely true, if Forrest’s defence of (B) is good, then he has all the ingredients for the argument from conscious experience. Maudlin (2007) offers a strictly analogous argument to the argument for conscious experience, but throughout he replaces ‘temporal passage’ with ‘temporal anisotropy’ to yield the conclusion that there is a temporal anisotropy. [↑](#footnote-ref-20)
21. An argument similar to this is offered by Price (1996 14-15), except that Price does not explicitly argue that B is the closest world to @ in which there is no temporal passage. Instead, he points out that there is a straightforward mapping of the events in one world onto those of the other, and likewise a straightforward mapping of mental states from one world to the other. I take it this is standing in for a kind of closeness metric between worlds, since clearly merely showing that there is some world in which inhabitants have the phenomenology that we do actually, but in which there is no temporal passage, is not sufficient to show that passage makes no difference to our phenomenology. [↑](#footnote-ref-21)
22. So here, the dynamist might resist by rejecting NCQC. [↑](#footnote-ref-22)