

FELT PASSAGE  
AN ANALYSIS OF THE SUBJECTIVE SIDE OF TIME'S  
PASSAGE

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## **ABSTRACT**

Joanna Lawson: *Felt Passage: An analysis of the subjective side of time's passage.*  
(Under the direction of L. A. Paul)

One of the central features of the debate about the nature of time is the supposed fact that time passes, or seems to pass. In this paper, I make explicit two distinct usages of “passage” which go undistinguished in the literature: metaphysical passage (according to which time itself has a dynamic element) and felt passage (according to which time presents itself as dynamic in subjective experience). Felt passage, I note, is notably underrepresented in the literature. Accordingly, I give a thorough analysis of felt passage, identifying four elements of experience that contribute to the subjective experience of passage. To demonstrate the usefulness of this analysis, I focus on the implications of just one of the four elements of felt passage on our understanding both of experience and the temporal sequence.

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# Introduction

In this paper, I strive to make clearer the muddled debate about what implications (if any) our seeming experience of temporal passage has for our understanding of the metaphysics of time. To do this, I make explicit a distinction that has been lurking beneath the surface of the debate about time: a distinction between *metaphysical passage* and *felt passage*. After a brief description of metaphysical passage and the various forms it takes in the literature, I focus on felt passage. I argue that felt passage is not a single, homogenous experience, but that it in fact has as many as four different facets. These are: the approaching future, the receding past, inexorability, and dynamicity.

After explaining these four facets of felt passage, I focus on just one of these features: dynamicity. I explain how a better understanding of dynamicity as an element of felt passage can help us move forward in the metaphysical debate. My conclusion is a disjunctive one. Either we should deny the doctrine of inheritance (the thesis that, for any temporal property apparently presented in perceptual experience, experience itself has that same temporal property), or we should reject the B-theory of time.

## 1 Metaphysical Passage Vs. Felt Passage

An ambiguity abounds in the philosophical literature between temporal passage as a metaphysical thesis, and temporal passage as a experiential thesis. For clarity's sake, I refer to the first way of understanding passage as *metaphysical passage* and the second as *felt passage*. After defining metaphysical passage, I highlight the importance of defining felt passage as a distinct phenomenon. The failure to carefully distinguish between metaphysical passage and felt passage has led to assumptions about their relationship—a relationship which is a key player in the metaphysical debate about time. I address several attempts in the literature to define felt passage, and find these attempts lacking. I give

my own account of felt passage as temporal movement experienced in the present.

## 1.1 Defining Metaphysical Passage

*Metaphysical passage* is the thesis that there is something dynamic about time itself. According to advocates of metaphysical passage, the present moment is an objective feature of reality, and that moment is constantly changing. Thus, an adherence to metaphysical passage requires a metaphysical commitment. There is something about time itself that is fundamentally and irreducibly tensed. What seems to be future is, in fact, irreducibly future. What seems to be past is, in an objective sense, past. Furthermore, this tensedness is not static: there is a real present moment, and this moment is getting later in time.

So-called A-theorists advocate some version of metaphysical passage. However, the form of this metaphysical passage varies a good deal from one A-theory to the next. I will briefly address three different theories of time that endorse metaphysical passage: presentism, the growing-block theory, and the moving spotlight theory. Though the theories are different, it is clear that they all affirm a core thesis of metaphysical passage. That is, they all endorse a present moment which is at once objective and dynamic.<sup>1</sup>

Presentists assert that only the present moment can really be said to exist. The past existed, and the future will exist, but only the present has any real ontological oomph. Kit Fine (2005) argues that presentism does not, in fact, achieve metaphysical passage. After all, what is it to say that something will exist, except to say that it does exist at some future time,  $t$ ? Presentism, then, is just a block of times, one of which happens to be present, but all of which exist (at some time or other). This, however, would be to beg the question against the presentist. It is part and parcel of the presentist theory that one cannot interpret “will exist” as “exists at some future time,  $t$ ”, for there *is* no future time,

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<sup>1</sup> Martin Lipman (forthcoming) argues that temporal fragmentalism can also provide a metaphysical account of passage. Fragmentalism, a term coined by Fine (2005), is the thesis that reality is made up of many fundamentally tensed, mutually incoherent “fragments” which correspond to moments in time. No fragment has priority over any other; each fragment takes the present to be a different time. I do not include Lipman’s view in the list of those that adhere to metaphysical passage, as it is unclear that his fragmentalism incorporates metaphysical passage as I characterize it above. Specifically, there is nothing particularly dynamic about Lipman’s view: passage, according to him, is a *relation* that holds between (static) temporal fragments.

$t$ .<sup>2</sup> There is only the present. The past and the future only get their past existence and their future existence parasitically, to the extent that the present moment (which takes under its umbrella everything that is the case) is partly constituted by facts about what was the case and what will be the case.

Metaphysical passage, according to presentists, consists of changes in, or of, the present moment, which is all there is. According to the presentist, “what it is for an event or thing to ‘move’ from the future into the present, and from the present into the past... is to come into existence and then go out of existence” (Zimmerman 2008, p. 309). These intrinsic changes to the present constitute the dynamic element of metaphysical passage according to presentism.

According to growing-block theorists, every present moment gives birth to a new present, even as it dies, resulting in the creation of the past out of the carcasses of old present moments. The “freshest” slice (call it  $t$ ) added to the growing block of time is the present. As newer, fresher slices are added,  $t$  finds itself buried deeper and deeper in the time-block. Insofar as  $t$  is not the freshest slice, it is not the present moment: it has become the past.

Identifying the privileged present moment is straightforward on growing block theory: whichever slice is the most recently added to the block of time just is the present moment. What may seem less straightforward, at least at first glance, is exactly how this theory is dynamic in the way required for metaphysical passage. No single time slice ever undergoes any changes other than relational (Cambridge) changes. From the moment that  $t$  comes into existence, it is the same as it will ever be, for as long as time endures. Where, then, is the dynamicity required for metaphysical passage?

To look for passage in any one time-slice in the growing block, however, would be a mistake. It was appropriate to seek out metaphysical passage within the present moment when we were examining presentism because there was, quite literally, nowhere else to look. What is dynamic about the growing-block theory is not that any single moment undergoes changes, but that the time-block itself changes. The time-block grows. For the

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<sup>2</sup> See Pooley (2013) for a fuller discussion of Fine’s criticism.



growing-blocker, this perpetual growing, getting larger as more and more time-slices are added to the block of time, is what metaphysical passage consists in.<sup>3</sup>

According to yet another A-theory of time, the moving-spotlight theory, the entire timeline exists from eternity, but one of these moments—the present moment—is specially “illuminated”. The present moment moves, like a spotlight, over the timeline from earlier to later times. This succession of the present moment is what moving-spotlighters understand metaphysical passage to be.

Fine (2005) thinks that the moving spotlight also fails to provide metaphysical passage. This is because the view, he thinks, fails to account for the *successive* presentness of different times. If the moving spotlight theory merely consists of a block of times with one special, illuminated center, we have not given an understanding of time which is at all dynamic. And without some objectively dynamic feature, a given theory of time cannot be one that affirms metaphysical passage as we have defined it. This “stuck spotlight” criticism, however, is ultimately unsuccessful against the moving-spotlighter. The moving-spotlighter will, quite rightly, insist that her view is not one in which the present is stuck at a single instant in time. If one grants that the present does adopt successive positions on the timeline, and thus grants a truly dynamic *moving* spotlight, this issue does not arise.<sup>4</sup>

There are, of course, those that deny that there is any such thing as metaphysical passage. Largely, this group consists of so-called B-theorists. According to the B-theory of time, there are only before and after relations: there is no privileged present moment. Just as in space it would seem odd to declare one particular location objectively “here”, the B-theorist maintains that it would be odd to declare one particular part of time “now”. Events precede or succeed each other in time, but these relations are static at a metaphysical level. Whether or not there is anything irreducibly directional about the nature of time itself, there is certainly nothing about time such that it can be said to

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<sup>3</sup> For a more complete elaboration and defense of the growing block theory, see Tooley (2000).

<sup>4</sup> Cameron (2015) does an admirable job of clearly articulating and defending the moving-spotlight view, as opposed to the stuck-spotlight view.

objectively pass or flow.

The point, here, is not to defend or undermine any particular understanding of metaphysical passage. The point is to demonstrate that both A-theorists and B-theorists have a stance on metaphysical passage. A-theorists think that time passes at a metaphysical level, but they understand this to mean very different things, depending on whether they endorse a presentist, growing block, or moving spotlight view. B-theorists, by contrast, do not think that time passes on a fundamental level.

It should by now be clear that questions about metaphysical passage are very different from the question of whether or not time seems (to us) to be passing. In the next section, I address this question of what qualifies as an experience of (or an experience that seems to be of) temporal passage.

## 1.2 The Enigma of Felt Passage

In contrast to metaphysical passage, which characterizes the dynamic nature of time itself, there is another phenomenon that is frequently referred to as “passage”. This is the passage of time *as we experience it* in everyday life, the subjective experience of temporal passage rather than the (putative) metaphysical fact of temporal passage. To distinguish the two, I will refer to this distinctive subjective experience as *felt passage*.

The way I characterize felt passage above—as the “subjective experience of temporal passage”—is slightly misleading. It seems to presume an experience *of* something real—metaphysical passage, for instance. This presumption, however, would be too hasty. It is important to note that an acknowledgement of felt passage does *not* in itself force one to endorse any particular theory about the nature of time.<sup>5</sup> One can acknowledge that mirages are a veridical human experience, but deny that they are experiences *of* any actual water glistening in the distance.

Similarly, one can grant that felt passage is a part of human experience, but deny that there is any such thing as metaphysical passage. This would be the case if, for instance,

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<sup>5</sup> L.A. Paul (2010) opts for referring to experiences “as of” passage, to indicate the fact that felt passage does not require any metaphysical commitment. I will occasionally appeal to this language for the same reason.

felt passage was an illusion. Maybe it seems to us as if there is metaphysical passage, but upon closer inspection, it might turn out that experiences as of passage really stem from, say, certain quirks of human psychology. Or perhaps the features of experience commonly referred to as felt passage do not even *seem* to be of metaphysical passage. Maybe any interpretations of felt passage as being at all passage-like are simply mistaken.

Though I want to flag these possibilities now, it is premature to address them until we know what the experience of felt passage—whether it is a mistake, an illusion, or our best sign of metaphysical passage—*is*. What do we mean when we say that “time seems to pass” or “it feels like time passes”? What sorts of sensations are we even referring to? After a discussion of metaphysical passage, it is clear what we are disagreeing about. Some theories concerning the nature of time have a dynamic element; others do not. But it is much less clear what is at stake when we speak of felt passage.

It is, however, very important to be clear what is at stake in speaking of felt passage, at least if we are to be able to understand time, its nature, and our connection to it. D. C. Williams calls felt passage “the vaguest but the most substantial and incorrigible” reason that anyone insists on the existence of metaphysical passage. He goes on:

It is simply that we *find* passage, that we are immediately and poignantly involved in the jerk and whoosh of process, the felt flow of one moment into the next. Here is the focus of being. Here is the shore whence the youngster watches the golden mornings swing toward him like serried bright breakers from the ocean of the future. Here is the flood on which the oldster wakes in the night to shudder at its swollen black torrent cascading him into the abyss.

It would be futile to deny these experiences, but their correct description is another matter. (1951, pp. 465-466)

Williams, in talking about the “correct description” of the experiences of felt passage, is more precisely referring to their correct *interpretation*. What sort of evidence does felt passage provide us with? It is imperative, however, to hit on a correct description of felt passage before we can hope to arrive at a correct interpretation. If the issue is

understanding the relationship between the metaphysics of time and the experience of time, as Williams seems to think, it is essential to identify the relata. It is quite clear what the candidates for the metaphysical side of the relation are: I described several in the previous section. But what is the experience of passage? Williams assumes that it is “futile to deny” the experience, but it does not seem terribly futile to deny the existence of something that is unidentifiable.

### 1.3 Defining Felt Passage

Attempts to define felt passage, however, are fairly cursory, and usually made only *en route* to some other point concerning the relationship between felt passage and metaphysical passage. Without a careful analysis of felt passage, unfortunately, such attempts are often confusing or vague. And despite assertions that passage is “obvious and commonsensical” (Zimmerman 2008, p. 307), there doesn’t seem to be much consensus about what felt passage is.

Robin Le Poidevin, for instance, asserts that “[w]e just *see* time passing in front of us, in the movement of a second hand around a clock, or in the falling of sand through an hourglass, or indeed any motion or change at all” (2007, p. 76). This makes it seem like felt passage is concerned exclusively with change. But Bradford Skow identifies felt passage with experiences that “have the content that some time has, or some things that exist in time have, presentness” (2011, p. 362), which makes it seem that it has much more to do with presentness than change. John Norton, on the other hand, thinks that passage is “just the mundane fact known to us all that future events will become present and then drift off into the past” (2010, p. 24), which of course gives the impression that it has to do with the past, present, *and* future.

Simon Prosser (2016) spends a good deal more time on the subject of felt passage than most. He thinks felt passage has at least seven distinct features (though he notes that “there may be others” p. 24), which are: memory, A-properties (that is: pastness, presentness, and futureness), the present (as an especially important A-property), dynamic change, motion through time, the open future, and the direction of time.

These are certainly some important elements of temporal experience. We can remember only the past, and we can identify some memories as being older than others. We experience time as having A-properties: experience is replete with the anticipation of future events, the recollection of past events, and participation in present events. Of these, the present seems, somehow, special. So does dynamic change. And it seems that we “move” toward future events and away from past events. The past does seem fixed in a way that the future is not, and time does seem to be distinctively directional.

Prosser’s approach is somewhat unique among analyses of felt passage in that he allows himself to embrace a multi-dimensional picture of experienced passage. This is attractive, insofar as it allows him to encompass all of the features of felt passage discussed by various philosophers above: the fact that certain changes seem to exhibit passage, that there is something special about the present, that we move through the past towards the future. On the other hand, his list seems to be rather indiscriminate. Are all time-related experiences *ipso facto* experiences of felt passage?

Prosser is not explicit about why he identifies the seven features of experience that he does. By taking a look at his description of the first listed feature, memory, his implicit criteria come into clearer focus. He argues that “by virtue of our memories we are aware of the approximate positions of events along the A-series; and, at least insofar as A-properties entail passage, if one is aware that events instantiate A-properties then one is at least in a position to be aware that time is passing” (2016, p. 24). The point seems to be: from memory we are aware of past events, from past events we are aware of an A-property (the property of pastness), and from this A-property we infer (or are at least in a position to infer) passage.

This characterization of memory typifies the confusion that often occurs in attempts to characterize felt passage. Prosser maintains that memory is an experience as of time’s passing because it puts one “in a position to be aware that time is passing”. Consider how odd this would sound if we spoke of any other feature of experience in this way. *Scarlet*, one might say, *is an experience of redness, insofar as it puts one in a position to be aware that redness occurs*. This may well be the case, but it certainly won’t help us to

understand the phenomenology of redness.

One way to interpret Prosser is to assume that he is attempting to demonstrate memory's place as a feature of felt passage by appealing to its inferential connection to metaphysical passage. Such a methodology in defining felt passage, however, puts the cart before the horse. We should first want to characterize felt passage and metaphysical passage independently of one another. Once we know what we are talking about, we will be in a better position to determine whether there is any connection (inferential or otherwise) between them, and whether, indeed, there is any such thing as metaphysical passage or felt passage at all.

There is a further problem with Prosser's methodology, besides the attempt to define felt passage in terms of metaphysical passage. All of our experiences, presumably, are understood to be past, present, or future. All experiences, then, would exhibit some "A-property" or other. So any experience whatsoever would provide grounds for inferring metaphysical passage. If we assume that an experience's ability to provide grounds for inferring metaphysical passage is sufficient to make it an experience of felt passage, this would mean that every experience is one of felt passage. This seems implausible, at least as a first attempt at characterizing a feature of phenomenology so frequently taken for granted. We should give felt passage the benefit of the doubt and assume that it is (at the very least) more present in some experiences than in others.

In order to get a more precise understanding of felt passage, allow me to set out the definition I will be using in order to identify which experiences qualify as felt passage.

*Felt passage:* the experience as of temporal movement in the present moment.

Felt passage is, by stipulation, an experienced phenomenon. By this, I mean that it is mind-dependent. It is, further, constituted at least partly by phenomenology, though this may not be the whole story: it may be that some amount of conceptualization is involved in felt passage, as well. Whatever the exact build-up of the experience, felt passage is importantly *subjective*. It has to do with the way the world seems from the point of view of a subject.

Next, felt passage has to do with the experience of time. However, it does not encompass all temporal experience. Rather, it is a special subset of time-related experience: dynamic experience of time. It is important to emphasize that this felt movement through time should be distinguished from the metaphysical dynamicity characterized by metaphysical passage. The sensation of movement is not always accompanied by the reality of movement, even in space—consider watching a film at an IMAX theater, or feeling one’s head swim with vertigo when lying ill in bed. There is no need to assume, at this point, that metaphysical passage is any sort of prerequisite for experienced temporal movement.

Finally, felt passage is experienced in the present. This may seem to be something of an odd requirement. Whether “the present” is conceived as an objective feature of an A-theory, or as a B-theoretic temporal indexical (referring, say, to the time of the utterance), presumably *whatever* one experiences is experienced in the present. For an A-theorist, everything that happens happens in the present (they *happened* in the past, or *will happen* in the future). On an B-theoretic reading, saying that felt passage has to do with the present would be tantamount to saying that it has to do with experiences that occur at the moment they occur. There would be no sense specifying something so tautological.

What I mean when I stipulate that felt passage is characterized by “present” experience is that, whatever felt passage is, it is the sort of thing that is not there in memories of past events or in imaginings of future events. Rather, it is the sort of thing that is affirmed of one’s current experience. In addition, it is not the sort of thing that requires lengthy durations of time to experience. Felt passage is experienced moment by moment, rather than by the hour or by the day. That felt passage is “experienced in the present” is meant to rule out recollective and anticipatory experiences, as well as experiences that require time frames with durations longer than a few seconds. The “present” that I mean to appeal to, then, is the *subjective* present, experiences whose content deals with the characteristics of one’s particular temporal location.<sup>6</sup> This subjective present need not be

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<sup>6</sup> An analogy can be drawn to physical space and “hereness”. One can have distinctive perceptual experiences of one’s physical location—the softness of the couch one sits on, the brightness of the light in the room, the sound of a bird outside one’s window. And presumably all one’s perceptual experiences

instantaneous, but it is nevertheless short-lived.

Though metaphysical passage and felt passage are certainly different phenomena, with this definition on the table it is clear why the two have so frequently been confused or conflated. Both metaphysical passage and felt passage have to do with the present and with temporal movement of some kind. Metaphysical passage, however, attributes an objectivity and a fundamentality to both of these, whereas felt passage has only to do with subjective experience.

Now that there is a workable definition of felt passage on the table we can ask: is there anything in experience that fits the description of felt passage? Certainly there have been those that deny that there is any such thing as an experience as of passage. Christoph Hoerl maintains that “there is in fact no phenomenology of passage” (2014, p. 23). Simon Prosser maintains that it is not only impossible to experience the passage of time, but that we cannot even speak intelligibly about experiencing time’s passing (2016, e.g. p. 57).

I argue that, on the contrary, felt passage is very real. On my view, there are four common experiences that fit the definition of felt passage set out above. I take these four experiences to be different elements or facets of felt passage. In the section that follows, I describe each of these and provide evidence to believe that they are objective and universal features of experience.

## 2 The Elements of Felt Passage

In an attempt to clearly articulate what it is like to experience felt passage, I tease out four common experiences that are characterizable in terms of temporal motion experienced in the present. These are: dynamicity, the approaching future, the receding past, and inexorability. I appeal to research in cognitive science and in linguistic anthropology to argue that these four facets of felt passage are objective and universal features of human

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are “here”, in some sense. But specifying that certain experiences are especially here-centered rules out experiences where one (while located in North Carolina) imagines or remembers seeing the Leaning Tower of Pisa. The content of such recollections or imaginings is decidedly not here-centered or here-oriented.



experience.

## 2.1 Dynamicity

The *dynamicity* of time is the distinctive “movingness” of temporal experience. There is a certain flow, an elusive “whoosh and whiz” that forms part of what it is like to experience a crescendo or a pirouette or a even a handshake. There is something lively and vital in the feeling of a trickle of sweat sliding down your temple, something that just isn’t there in memories of being sweaty, at least not in the same way.

Descriptions of this poetic ilk are evocative, but they do little to get at the heart of what is going on when we think of the “whoosh and whiz” of temporal passage. What does it mean to say that we experience time as “dynamic”?

It is tempting to say that temporal dynamicity is simply felt or experienced change. Change does seem to be the common thread in the evocative images cited in the descriptions of “whoosh and whiz”. However, I don’t think that this is quite right: temporal dynamicity is experienced only when experiencing the *right sort* of change in the *right sort* of way. As C.D. Broad points out, “to see a second-hand moving is quite different from ‘seeing’ that an hour-hand has moved” (1923, p. 351).

The sorts of changes that are candidates for the experience of temporal dynamicity are perceptible changes: changes that occur neither too quickly nor too slowly. Furthermore, in order to experience the dynamic force of such changes, one must be paying the right sort of attention: one must be focusing on the change as it is occurring, rather than simply noticing that the change has occurred.

Let us grant that when we witness the second-hand move, feel a trickle of sweat, hear the swelling crescendo of the orchestra, we experience temporal dynamicity. These are the sorts of things we can notice as they are changing, the sorts of things we not only recognize as being dynamic, but the sorts of things that we can experience as being dynamic.

For, even if a person stared very intently, with great determination and force of will, at a tree throughout the whole of an exceptionally still day, he would not experience the tree’s growth as being dynamic. If he stayed for a month, a year, he would not see the

tree grow in this way. At best, he would be able to compare his memory of the tree from the first minute of his vigil to his present view and realize that the tree had grown. But if, one fine evening, a breeze rustled the branches, our spectator would see branches stirring and hear leaves rustling. The gerund, here, is indicative of the sort of change I mean to call attention to. It is the change that we can mentally participate in, and be present (as in, the opposite of “absent”) for.

Dynamicity is a very clear instance of felt passage. It is a way in which we experience temporal movement in the present—it seems that time moves dynamically. We witness this when we witness changes that occur over short intervals. The things we experience in the present have an especially flowy, vivid character, even more so than the dynamic changes we remember or imagine. Some philosophers think that the short intervals over which changes are experienced dynamically is in fact identical to the interval of time over which the subjective experience of the present occurs. The relevant discussion in the philosophical discussion often takes place under the heading of the “specious present”.<sup>7</sup>

The doctrine of the specious present says that we experience time, not in durationless wafters, but in temporal “chunks” of a certain duration.<sup>8</sup> These chunks are thought to last somewhere between a few tenths of a second and a few seconds (Grondin 2010). Notably, this is the duration of time during which one can experience dynamicity in the relevant way. Changes that occur within the window of time known as the specious present appear dynamic. The ticking of the second hand, on this reading, would be within the specious present “window”, while the slow progress of the hour hand would change too subtly in any given window to be noticeable.

It is important to note that, in highlighting the dynamicity of temporal experience, I am not committing myself to the doctrine that experience itself is durational. I am

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<sup>7</sup> This terminology comes from William James (1890).

<sup>8</sup> There are two main analyses of the specious present. According to the first, a small portion of the past is retained in the memory, so as to be perceived “at once with” the present. According to the second, experience itself is temporally extended, such that it is the temporal “saddle” on which we sit to experience the world. For my purposes, it does not matter which theory is correct, or even if experience is, in fact durational. This being the case, I prefer to remain neutral between the two understandings of the specious present. For a good history and analysis of the specious present, see Dainton 2010.

merely appealing to the widely-recognized fact that changes that occur within a certain durational window (a window which, perhaps, has a special relationship to the duration of the subjective present) are experientially distinctive.

The psychological literature is in agreement. In fact, in a variety of experiments, subjects tend to experience even more flowiness and dynamicity in changes occurring within this duration (of a few tenths of a second to a few seconds) than the stimuli in fact justify. Experiments involving temporal illusions highlight the emphasis—or even the imposition—of dynamic flow in changes occurring within a short timeframe.

One the most well-known examples is that of the “cutaneous rabbit” (Geldard and Sherrick 1972). In cutaneous rabbit experiments, a subject is given five taps in quick succession, first on the wrist, then five quick taps on the elbow, then five taps on the upper arm.<sup>9</sup> Instead of feeling the taps just on the wrist, elbow, and upper arm (where the stimuli occur) the subject will report feeling evenly-spaced taps “hopping” up the arm, starting at the wrist and ending at the upper arm. In other words, instead of feeling three groups of taps in three distinct locations, the subject will report feeling a continuous series of evenly-spaced taps proceeding up the arm. However, if the subject is only given the five taps on the wrist (and no taps further up the arm) she will report exactly that: five taps on the same location on the wrist.

Another classic example is that of “apparent motion”.<sup>10</sup> In apparent motion studies, a static image is shown to a subject and quickly replaced by another static image some distance from the original. As long as the interval between the disappearance of the first image and the appearance of the second is short enough (shorter than 400 milliseconds), but not too short (anything less than 50 milliseconds will appear simultaneous to the subject), it seems that there are not two images, but a single image which moves (Artsila 2016).

Cases of apparent motion are common enough: think of a child’s flip-book, in which

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<sup>9</sup> For clarity and ease of exposition, I stipulate an experiment that uses five taps on wrist, elbow, and upper arm. In reality, experiments differ a bit in the location and number of taps. The findings are the same in any case, so this precisification will do as well as any other.

<sup>10</sup> Max Wertheimer (1912) is the father of apparent motion studies, which are numerous and diverse.

static images are revealed and replaced in such quick succession that they appear to be moving across the page. Many experiments have been done with flashing dots on a computer screen, but it doesn't matter much what the stimuli are. As long as the time intervals are correct, even if the static images are non-identical (varying in color, shape, or size) the subject will report a single image which not only moves, but changes midway through its journey (Kolers and von Grünau 1976).

Accounts like these indicate that there is something special going on in experiencing short-interval changes. The claim here is not meant to be particularly tendentious. I am merely emphasizing that changes that occur in fairly short intervals of time are the changes that we perceive as being continuous, flowing, and dynamic. Sometimes changes that are in fact objectively *un*continuous, if they occur rapidly enough, seem to take on a continuous, flowlike character (as in cutaneous rabbit and apparent motion experiments).<sup>11</sup>

Temporal dynamicity is represented in the way people speak about time across the globe. In almost every language studied to date, metaphors of motion and movement are used to describe temporal experience (Moore 2014). In English, this can be seen in the aphorism “time flies”. But metaphors of movement are much more embedded in our language than this. The weekend is coming; the day of reckoning approaches. Christmas is getting closer; this day drags on. It would be a difficult task to come up with a metaphor more commonly used or more taken for granted than those likening temporal experiences to experiences of movement.

This tendency to characterize time in terms of location and motion seems to be fairly ubiquitous in languages studied thus far. Moore (2014, p. 31) notes that “[l]anguage after language shows the same pattern in which words and syntactic structures with which people talk about location and motion are also used to talk about temporal experience in predictable ways”. Among industrialized cultures, there do not seem to be any exceptions to this rule. Those languages in which no motion metaphors are noted are precisely those

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<sup>11</sup> Hoerl (2015) denies that apparent motion is actually experienced as motion. Rather, the experience is of a jumpy image, which is then *interpreted* as moving. On this reading, apparent motion would be a *post hoc* judgment—the brain's construction of the most plausible reading of the experienced stimuli, rather than an experience of a stimulus that seems to be moving. For a good explanation of why this is probably not the case, see Artsila (2016).

languages that have been understudied, or have only recently come to the attention of anthropologists (Núñez and Cooperrider 2013).

It is almost impossible to speak of time without, in one way or another, speaking of motion. That such metaphors are so pervasive, so inescapable not only in English but in almost every language studied to date, suggests that there is something particularly apt about such metaphors. The aptness, I suggest, stems from the fact that we experience time as being dynamic, rather than static. At least in part, when we speak of felt passage we mean to speak of this dynamic quality of time. It is flowy and continuous, or at least it seems to be when we attend to changes that occur in a very short (though still perceptible) time frame.

This past section dealt primarily with the vibrant dynamicity of time. In what follows, I argue that time not only seems to move, but it seems to move in a particular way. When we say that time passes, we mean that time passes from somewhere to somewhere. There is a distinctive directionality to felt passage, stemming from the fact that the future seems to get nearer, and the past seems to get farther away. I examine both of these elements of felt passage in turn, starting with the apparently shrinking distance between oneself and future moments.

## 2.2 Approaching Future

The next element of felt passage that I turn to I call the *approaching future*. Future times and events seem to get ever nearer, either because one seems to be steadily marching toward the future, or because the future seems to be drawing closer to one's own temporal "location".

As a chubby, asthmatic teenager with very little hand-eye coordination, I remember feeling as if gym class was bearing down on me, drawing oppressively nearer. Every second that went by was a second lost, a second that could no longer shield me from what seemed to me to be the prospect of public humiliation, physical pain, and the inability to perform to satisfactory standards. I expect that everyone has his or her own stories of dread in the face of a looming deadline. Stories like these are Prior's (1959) "Thank Goodness

That's Over", seen from the other side—they are the "Dear Goodness, It's Almost Upon Me" experiences.

It is important to note that the experience of the approaching future is distinct from the knowledge that one must prepare for an event which is going to occur. It is also different from the ability to imagine with increasing precision what a future event will be like. Neither is it mere fear or anxiety in response to an anticipated occurrence. This is clear because it is possible to feel that a future date approaches even if one doesn't dread it—say, the approaching of a highly anticipated party, or the date of a loved one's return.

Though the approaching future is very different from dynamicity, it is important to note that it, too, falls squarely under the umbrella of felt passage. It is a way in which we experience the movement of time in the present: we feel as if the present is *moving toward* the future. Or perhaps equally appropriately, we feel as if, from our present-centered vantage point, the future approaches us. The phrase "approaching future" is intentionally ambiguous between "the future which is approaching (us)" and "the future which we are approaching". This is because, in a close analysis of felt passage, it doesn't much matter which metaphor is used. The future is getting closer to us, or we are getting closer to the future: either way, what was once distant is now immanent.

It is possible to blame the sensation of the approaching future on the words we use. We speak as if the future approaches, or as if one approaches the future. *We are nearing the end of the semester*, we might say, or refer to the deadline that is *approaching*. Perhaps the ways that we refer to time infect our conception of it, such that the more imaginative of us even purport to feel the supposed "approach", even though there is in fact no such feeling.

This hypothesis is discredited by the fact that it is not only English-speakers who refer to the future as if it approaches. It is not that English is a quirky language which leads to a quirky conception of time. English is, rather, one of the vast majority of languages which makes use of at least one of the following two temporal metaphors: the Moving Self, and the Self-Centered Moving Time.<sup>12</sup> These include not only western Germanic and

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<sup>12</sup> In the literature, these two metaphors are referred to as the "Moving Ego" and "Ego-Centered

Latin languages, but middle-eastern languages (Turkish), eastern languages (Japanese, Chinese), and African languages (Wolof, Chagga).<sup>13</sup>

According to Moving Self metaphors, the speaker refers to herself as if she were moving through time, out of the past towards the future. Phrases like “We’re coming to the end of the seminar,” or “We’re heading toward the holiday season” are instances of the Moving Self. Self-Centered Moving Time, by contrast, characterizes the self as stationary, while time itself moves toward us. The future approaches until it is here, present, and then it moves behind us into the past. We can see instances of this in phrases like, “Christmas is coming,” and “We should not let this opportunity pass us by”.<sup>14</sup>

Núñez and Sweetser (2006, p. 412) sum up the matter well when they say,

Construals of time as relative motion (whether time or [self] is moving) thus seem likely candidates for primary metaphors.... Indeed, these mappings seem pervasively salient in the world’s languages, being both the primary sources for lexical expressions of temporal reference and the primary sources of tense markers.

Given that so many unrelated languages make use of metaphors that presuppose the approaching future, it is not much of a leap to suppose that there is something about temporal experience itself that has an approaching-future aspect. These metaphors are nearly universal because, I suggest, there is a common element of temporal experience that makes such metaphors particularly apt. This element of temporal experience is the approaching future.

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Moving Time” metaphors. I opt for language concerning the self rather than the ego for readability.

<sup>13</sup> For data concerning Turkish metaphor, see Özçaliskan and Slobin (2003); for data on Japanese metaphor, see Shinoara (1999); for Chinese, see Yu (2012); for Wolof, see Moore (2014); for Chagga, see Emanatian (1992). There do seem to be a few languages in which there is little or no linguistic representation of the approaching future. The Aymara people of the Andean highlands seem to be one such people group (Núñez and Sweetser 2006). They do conceive of time as moving (from left to right), but do not tend to use metaphors which refer to the self as being embedded in, or part of, the movement. However, examples like the Aymara language are few and far between.

<sup>14</sup> Lakoff and Johnson (1980) were the first to bring critical attention to the Moving Self and Self-Centered Moving Time as important conceptual metaphors.

## 2.3 Receding Past

Just as the future approaches, the past seems to get farther away. I call this element of felt passage the *receding past*. This is the experience one might have when, say, a dear friend or relative passes away. It is not just that one's memories of the deceased grow irrevocably dimmer with each passing day—even if this is the cause of the sensation, it is not the sensation itself, at least not for everyone. Rather, it is the feeling that each passing day, each passing moment is actually separating one more and more from the loved one. The person you knew and the time you spent with them slip farther away as each new day steps in between you and them.

As is the case with all of the elements of felt passage, the receding past is felt more acutely by some people than by others, and more intensely at some times than others. I have even spoken to some individuals who claim never to have had an experience as of the receding past at all. The reason I bring up the case of the deceased loved one is that it seems to me to be a case when the receding past tends to be felt fairly strongly, but there are other examples as well. Perhaps one feels one's childhood grow more distant as the years roll on, or wishes that a particular embarrassment would shrink into the past more quickly. It is not that one feels one's memories grow less distinct, though this is perhaps a related experience. It is that one feels the temporal distance between oneself and the event growing as the event seems to slide farther into the past.

The same linguistic commonalities that suggest that the approaching future is a common experience also indicate the prevalence of the experience of the receding past. The timeline is a fixed series, and most cultures speak as if we move through the series, such that future events grow ever nearer and past events become more distant, or as if time moves past us, with precisely the same upshot.

In every single language studied to date, the present moment is metaphorically conceptualized as the speaker's physical location, such that *now* is likened to *here* (Núñez and Cooperrider 2013). Similarly, temporal immediacy (that is, the immanence of a future



time or recentness of a past time) is likened to physical proximity (Moore 2014).<sup>15</sup> As time moves on, one’s temporal “here” gets ever farther from past times and events. The less recent an event is, the “farther away” it is. And as the present moves on (or as one moves through time), the past recedes into the distance.

## 2.4 Inexorability

“Listen: Billy Pilgrim has come unstuck in time,” Kurt Vonnegut tells us in *Slaughterhouse-Five*. Billy Pilgrim hops backward and forward through time: now an old man, now a newlywed, now a veteran, now a soldier. The order of his life is shuffled like a deck of cards.

Most of us, unlike Billy Pilgrim, *are* stuck in time. This is not to say that it seems that we are temporally paralyzed. We do seem to move through time, that much is clear from the preceding discussions of dynamicity, the approaching future, and the receding past. But we move through it in a way that is distinctly un-shuffled. We move, or time moves, methodically, deliberately, and predictably.

Consider how different this is from the way we move through space. When I go on my morning walk, I can choose to go quickly or slowly; I can take a moment to stop and smell the roses. I can even turn around and go back the way I came. None of this is the case with movement through time. There is one available direction (forward) and one speed (one second per second, whatever that means<sup>16</sup>). One cannot choose to fast-forward

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<sup>15</sup> Even in Aymara, a language which does not use Moving Self or Self-Centered Moving Time metaphors, the present is *here* and events of many years ago are conceived of as being a very long way off (Núñez and Sweetser 2006). Furthermore, they do conceive of time as being dynamic, something that moves and progresses. They simply do not conceive of themselves as being part of or, rather, embedded in that movement. It is possible that this is due to the distinctive Aymara tendency to conceive of the future as being behind, and the past as being in front of one. (Núñez and Sweetser (p. 440) speculate that this is due to the importance of sight to Aymara epistemological practices: “So pervasive is this distinction of sources of personal [i.e. personally seen, witnessed] and nonpersonal [i.e. nonwitnessed] knowledge that it is almost impossible to utter a sentence without marking the appropriate source.”) The past, being known, is before one’s eyes, while the future, being unknown, is behind one’s back. But with the future behind and the past before, if the Aymara people were to conceive of themselves as moving through time, they would have to represent this as themselves moving backwards. This is not impossible to do, of course, but may not have seemed quite right to the Aymara people.

<sup>16</sup> I grant that this is a puzzling, and perhaps even incoherent, notion. However, since I am focusing on what seems to be the case, it doesn’t matter if it makes much sense to say that “time moves steadily at a constant rate” if that is, in fact, what seems to be the case. My concern is elucidating what in fact seems

or rewind through time. The option is simply not available.

I call this element of felt passage *inexorability* mostly because I am not sure what else to call it. Inexorability, as I use the term here, is the fact that the order, rate, and direction of time are experienced as being invariant and uncontrollable. Time marches on, no matter what we do or will. And it invariably seems to march on in exactly the same way, every day, every minute.

There has been much recent discussion, both philosophical and psychological, about the fact that time sometimes seems to be going more or less quickly depending on what one is doing. When enjoying drinks with good friends, hours may seem to evaporate in a matter of minutes—*Where did the time go?* On the other hand, when one is suffering through a boring meeting, the very seconds seem to drag on for hours—*Those were the longest two hours of my life.*

It may seem, at first, that this phenomenon undermines the putative experience of temporal inexorability. However, I am convinced that this is not the case. This is because perceived differences in the rate of time have more to do with retrospective judgment and internal timekeeping than with the experience of how “fast” one is moving through time.

Suppose that Alfred, a ballet enthusiast, takes his uninitiated friend, Betty, to see *Swan Lake*. Alfred is entranced by the graceful movements, the moving melodies, the compelling storyline. Unfortunately, Betty does not have an equally enjoyable experience. She is confused about what is going on and unable to appreciate either the music or the skill of the dancers. As they stand to stretch their legs during intermission, Alfred comments on how quickly the show seemed to pass, how he can’t believe it is already halfway over. Betty, however, cannot believe that there is still more to come—surely she has already been in the theater for three or four hours. She looks at her watch: it has been exactly one hour.

Alfred and Betty have very different experiences of the ballet; this much is undisputed. Alfred felt like the first half went quickly; Betty does not. But did time seem to be *passing*

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to be the case, not figuring out what “one second per second” means. For a discussion of the “rate” of time, see Skow 2012.

differently for each of them? No pirouette or plié seemed rushed to Alfred, certainly not *all* of them. And it is not as if he simply went into a fugue state during parts of the ballet, such that he in fact was not attending to all the parts of the dance that Betty was attending to. If anything, he was able to pay *better* attention to the ballet than Betty was, due to his expertise and enjoyment of the subject matter. Furthermore, it is not that Betty experienced the dancer’s movements as being lethargic or sluggish. The dancers are quite quick; it’s the *ballet* that takes ages to finish.

Most plausible accounts of this phenomenon have to do with the psychological mechanism involved in internal timekeeping (Merino-Rajme 2014, Phillips 2012). The difference is in Alfred’s and Betty’s different *assessments* of how much clock-time has passed: for whatever reason, Alfred’s internal clock registers that less time has gone by than Betty’s internal timepiece.

It is worth noting that difference between Alfred’s and Betty’s experience is largely a retrospective one. They are surprised, after the fact, that the ballet took as much (or as little) clock-time as it did. Even in the midst of the performance, Alfred may make an internal note to himself: “This half of the ballet has been flying by”. Still, this is something of a retrospective judgment. It is not that the dancers Alfred is currently witnessing seem to progress in fast-forward mode. It is that, looking back on his experience of the show thus far, he notices that this past experience seems to have gone by quickly. More things have happened than the time on his internal clock allows for. The experiences that are part of his subjective present are inexorable. Felt passage has to do with the experience of the way time seems to move in one’s subjective present. It is not concerned with retrospective judgments.

Even if one disagrees with the assertion that Alfred/Betty experiences are largely retrospective in nature, it is important to emphasize that neither ballet-goer can accelerate or decelerate at will, the way they can when moving through space.<sup>17</sup> They cannot choose

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<sup>17</sup> A possible exception to this rule might be drug-induced distortions in temporal experience. It is notable, however, that most drug-related temporal illusions make it seem (as boredom or enthrallment do not) that individual movements themselves seem to be sped up or slowed down. Where Alfred and Betty do not see anything odd in a particular pirouette, drugged-Alfred and drugged-Betty would. See Meck 1996, Rammsayer 2008, and Ogden et al. 2011. Certain neurotransmitters, such as dopamine,

to have the dance last longer or end sooner: time is just as inflexible as ever, even when it seems to be flying (or crawling) by.

Not only is the progression of time at its own pace inevitable, it is also an inexorable feature of felt passage that one cannot be “at” one moment more than once. Once a moment has been lived, that is it—the moment is gone. We may remember past moments, but memory is fickle and vague. Experience is definite and vibrant in comparison.

Whatever the fact of the matter is, metaphysically, it only seems that we are “at” a succession of particular times. We are only ever at one time, and we can never return to this time again. It is a “one and done” deal. One can return to Los Angeles or Boston, but one can never return to one’s childhood for a visit.<sup>18</sup>

If I were to sum inexorability up in a slogan, it would be this: time happens *to* us. Temporal location and temporal progression are completely out of our hands. Time is a ubiquitous feature of human experience, and we always experience it on time’s own terms, never our own.

Inexorability makes various appearances in the philosophical literature, though never under that name. It has been noted by various philosophers that a conception of the self as something that endures through time and change seems to be very important to narrative creation and successful self-conceptualization.<sup>19</sup> One does not conceive of oneself as a perduring entity, a time-worm, at least not in daily life. One thinks of oneself as being are fully present at *every* time-slice, and one thinks of this full presence as moving through time.

Inexorability also forms a big part of Prior’s “Thank Goodness That’s Over” argument. When a migraine strikes, there is no way out except through: one is forced to suffer the pain for as long as it lasts. There is nowhere, no time, else one can go to escape. Once the painful experience has ended—that’s it. It’s over. One could not go back even if one

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also seem to be linked to time perception (Rammsayer 1990). I class such neurotransmitter effects with drug-induced temporal distortions.

<sup>18</sup> At least, not in normal circumstances. I do not wish to rule out the possibility of time travel.

<sup>19</sup> See Velleman 2006, Ismael 2007.

wanted to, and this is a relief.

Inexorability appears in English, when we speak of time as if it were a resource. It is something that we speak of as if, once it is used, it is used up, gone. We encourage each other to do silly or courageous things on the grounds that “You only live once”. One can spend time, waste it, set it aside, save it, squander it. Time is a coupon with an asterisk and small print: void after use.

I bring up these Time as a Resource metaphors not because it underscores the universality of the experience, but more as an intuition pump. In fact, the Time as a Resource metaphor is one of the less frequently noted of the global temporal metaphors. This may be due, in part, to the fact that the contemporary research focuses much more on spatial metaphors used to describe temporal orientation (is the future up or down, right or left, east or west, in front or behind?) than on other metaphors (Núñez and Cooperrider 2013).

On the other hand, the relative scarcity of Time as a Resource metaphors in nonWestern languages may have to do with cultural factors. In the majority of Western, industrialized cultures, time is money. Things happen quickly and on time. Emphasis is placed on punctuality and time-management. These societies run on what is called *clock time*. In other societies, by contrast, things are much more relaxed. Starting times are given as a guideline, not a rule. Things will happen when they will happen, when people are ready, eventually. The emphasis is much more on moving from event to event. Once people feel that the goals of previous event have been met, they move on to the next thing. Such societies are said to run on *event time* (Avnet and Sellier 2011).

This difference may be one explanation of the abundance of Time as Resource metaphor in languages of post-industrial nations, and its relative scarcity outside of these (Moore 2014). In event-oriented cultures, it makes less sense to emphasize the preciousness and the irretrievability of time: things will proceed as necessary, there is no need to rush. In clock time cultures, which emphasize efficiency as a prime virtue, it makes a good deal more sense.

Note that this does not mean that event-oriented cultures do not experience temporal

progress and location as inexorable features of reality. Nobody speaks of time as if one could just “hop back to the past and check” something forgotten. It does mean that temporal inexorability—the fact that one has exactly the time that one has, no more, no less—is particularly frustrating to cultures that emphasize production, quantity, and efficiency, cultures that value getting the most out of every minute and every day. Various cultures that run on so-called event time do tend to see the progress of time as something that happens to them. For instance, the Time as a Mover metaphor is common in them (Moore 2014). Such metaphors include the English phrases, “The hour grows late”, and “It’s approaching dawn”. Time *itself* is seen as moving forward, unbidden, whether or not anyone is there to appreciate the fact.

In §1, I quoted D. C. Williams as stating that “we simply *find* passage”. In this section, I noted the various ways that we find passage. We find passage in the dynamic rustling of tree branches, in the approach of an impending deadline, in the retreat of last week’s party into the past, in our own inability to move through time the way we move through space. Our lived experience of the present moment’s movement is dynamic and inexorable. The future approaches, the past recedes.

### 3 Inheritance and Felt Passage

The features of felt passage, once disentangled, can lead to surprising conclusions about the nature of experience, as well as the nature of the temporal sequence. In the next section, I focus particularly on dynamicity and the implications that it has for the debate when combined with the principle of *inheritance*. If we accept inheritance, I argue, we must grant that experience itself has the sort of dynamic structure that is incompatible with a B-theory of time.

In what follows, I first explain what the principle of inheritance is, and why one might be attracted to it. Then, I argue that accepting the principle of inheritance requires a denial of the B-theory of time.

### 3.1 The Principle of Inheritance

The principle of inheritance is as follows:

*Inheritance:* for any temporal property apparently presented in perceptual experience, experience itself has that same temporal property.<sup>20</sup>

Inheritance claims that, when it comes to temporal properties, however our experience *seems* to us is the way our experience in fact *is*. When, for instance, it seems that our experience is extended in time, this is just because our experience itself is extended in time. Or when it seems that one's experience of, say, seeing a flash of lightning precedes the experience of hearing a crash of thunder, inheritance tells us that, in fact, the experience itself is structured this way.

Notice how different this is from our understanding of the nontemporal properties of experience. When I see a green triangle, this needn't imply that my experience is green, nor does it mean that my experience is triangular. In fact, it is rather doubtful whether my experience even *seems* colored or shaped. My experience is *of* something green and triangular, but the experience itself doesn't seem to resemble the triangle in color or shape.<sup>21</sup>

Let me put the issue in a slightly different way. Experiences are *content bearers*. Just as smoke signals can be the vehicle for bearing some content (say, two short puffs bear the meaning "green"), without resembling the content (the puffs are smoke-colored, not green), experiences can be the vehicle of many different types of content without resembling this content. An experience, as the vehicle, can bear a certain green content without actually

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<sup>20</sup> I take this definition directly from Phillips 2014, p. 131. Phillips is the main advocate of inheritance, though he cites Martin (2006), Soteriou (2010), Hoerl (2013), and Rashbrook (2013) as being sympathetic to the view.

<sup>21</sup> There are, of course, representational theories of perception which hold that there is in fact something besides the triangle that is green and triangular: the mental representation of the triangle. According to such theories, we only ever directly perceive mental representations. Here, for simplicity, I assume a direct theory of perception, such that (in good cases) the objects of perception are in the world, rather than in the mind. However, even given an indirect theory of perception such as a representational theory, it is dubious whether one's experience has nontemporal properties such as color and shape. It could as well be argued that experiences are of the mental representations that have nontemporal properties.

being green itself.

Furthermore, experiences don't seem to be the sorts of things that can even have color or shape. At least, they are not green or triangular. If one thinks that experiences boil down to certain chemical processes in the brain, then there is certainly some structure (and even color) to the brain matter in which the chemical processes occur. But in their subjective aspect—that is, as seen “from the inside”—experiences are all but invisible. The objects in the world have properties like color and shape and texture and odor, but our experiences themselves aren't smelly or soft or green or triangular.<sup>22</sup>

As opposed to nontemporal properties, however, “our experiences *do* manifestly have temporal properties, being processes or events which persist through time and occur before and after one another” (Phillips 2013, p. 227). Given that our experiences do seem to have temporal properties, the question becomes: what is the relationship between how our experiences seem to us to unfold over time and how our experiences actually unfold over time? What is the metaphysical structure of experience (in its subjective aspect) over time?

Inheritance tells us that, in non-illusory cases, our experiences are temporally structured in precisely the way that they seem to be structured. When my experiences seem temporally extended, they are. When my experiences seem to have a successive structure, they do. This is an extremely intuitive way of understanding the structure of experience in time. Our experiences have those temporal properties that they seem to have.

There is a marked disanalogy between temporal and nontemporal properties. As I have been at pains to point out, just because greenness is presented in experience does not mean that the experience itself has any such property. However, when duration or succession are presented in experience, the thought is that our experience *does* have these properties. This is because, when it comes to experience, temporal properties are different, special. Experiences, *qua* processes or events, indisputably have temporal properties in a

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<sup>22</sup> In saying this, I do not wish to take a stance on the principle of experiential transparency, according to which we only ever have access to the objects of experience—never the non-representational features of the experiences themselves. I do wish to appeal to the plausible thought that our experiences do not have (and do not even seem to have) many of the properties (such as texture, odor, color, etc.) that are in the world. For more on transparency and related issues, see Crane and French 2015.



way that they would struggle to have other properties.

It is worth elaborating on a couple of points, in order to clarify the discussion. First, inheritance does not rule out the possibility of temporal illusions. Sometimes, two stimuli seem to occur simultaneously, while in fact one occurs slightly after the other. Inheritance is not in tension with such illusions. What would put inheritance under pressure is not a disconnect between the temporal properties exhibited in the world and the temporal properties possessed by experience, but rather a disconnect between the temporal properties that experience appears to have and the properties that it does have. If two stimuli seemed to occur simultaneously, but it was discovered that the experience in fact had a successive structure (such that it first represented one stimulus and then the other), this would contradict inheritance.

Second, inheritance does not make the implausible claim that metrical judgments about how much time has passed (in terms of “clock-time”: seconds, minutes, hours) is a proper candidate for inheritance. When it seems to me that a fire alarm has been going off for six minutes, this does not mean that therefore, according to the principle of inheritance, my experience of the fire alarm has indeed been going on for six minutes (regardless of how long the alarm has been sounding). It is certainly possible to misjudge the amount of time that has passed. This is because, in cases like the sounding of the fire alarm, what is happening is a *judgment* of duration, not a seemingly perceived temporal property. Clock-time assessments of duration are retrospective judgments. They are not temporal properties seemingly possessed by experience.<sup>23</sup>

Finally, it is worth pointing out the consequences of rejecting inheritance. If inheritance is false, then (at least some of the time) the way our experiences seem to be structured in time is not the way that they are actually structured. We would, in other words, be epistemically alienated from our experience. This is a deep form of skepticism: even our own experiences may not be as they seem.

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<sup>23</sup> I am speaking here only of clock-time duration judgments. There may be such a thing as *subjective* duration, according to which an event seems to be flying by, or taking ages, but this is another matter altogether. For more on subjective (relative) duration, see Phillips 2013.

### 3.2 Grounds for Rejecting the B-theory?

Inheritance, as elaborated above, is a strong thesis. It says that there can be no disconnect between an experience seeming to have any temporal property whatsoever and the experience in fact having that property.

Phillips sticks to some fairly innocuous temporal properties in his analysis of inheritance, properties such as duration and succession. Both A- and B-theorists can, if so inclined, agree that experiences are extended in time and (at least occasionally) have successive structure. Experience, however, might well have other temporal properties. Here, I look at the consequences of applying the principle of inheritance to dynamicity.

Recall that dynamicity is the flowing, moving character of temporal experience. When we watch a tree's branches twisting in the wind, this perceptual experience presents itself to us as dynamic. Now, if we accept inheritance, it is not just that our experiences seem dynamic. Our experiences *are* dynamic. If our experiences are dynamic, it follows that something is dynamic. There is something in the world (our experiences) that not only appears to be dynamic, but in fact has that very property. Consider:

1. Inheritance: For any temporal property seemingly presented in perceptual experience, experience itself has that property.
2. Dynamicity is a temporal property seemingly presented in perceptual experience.
3. Therefore, given inheritance, experience itself has the property of dynamicity. (From 1, 2)
4. If anything is dynamic (has the property of dynamicity), then the B-theory is not true.
5. Therefore, the B-theory is not true. (From 3, 4)

There are several sticking points in the above argument. Particularly, I ought to offer some argument for the plausibility of premises 2 and 4. Both are, I think, defensible. Once this has been shown, what will become clear is that temporal theorists ought to give

up one of two things: inheritance, or the B-theory. Either experiences are not as they seem to be, or there is something in the world that is not B-theoretic.

Premise 2 has two components. It claims that dynamicity (a) is a temporal property and (b) is seemingly presented in perceptual experience. I address both of these components in turn, in order to make a case for the plausibility of premise 2.

Dynamicity is a property, that much seems clear. But is it a *temporal* property? Dynamicity certainly has to do with time, since it has to do with changes that occur in time. According to Phillips, however, this is not enough to be a temporal property. He maintains that:

[T]hough it is very natural to think of motion and change as temporal properties since they bear a logical connection to time, it is important to note that they are not strictly speaking within the extension of “temporal properties” in the formulation of inheritance.... Given the logical connection between change and succession, inheritance arguably entails that any experience of change involves change in experience. But when we perceive a *particular* form of change, such as motion or change of colour, it is neither plausible to think, nor any commitment of inheritance, that our experience itself *moves*, or changes *colour*. (2014, pp. 133-4, original emphasis)

If experiences are not the sorts of things that have color, then it certainly seems to follow that they do not change color. It also seems right to say that experience does not move. At least, experience needn't change physical location as the objects of experience change physical location. It is clear that such properties are not candidates for inheritance. *A fortiori*, changes in these properties are not candidates for inheritance.

It may seem at first glance that dynamicity ought to be ruled out on precisely these same grounds. Dynamicity, after all, is a property of changes. It is the experientially distinctive character of perceptible change. And these changes are *physical* changes, changes in color, or in position, etc. So it is tempting to say that dynamicity, given its reliance on properties which are not candidates for inheritance, is also not an appropriate

candidate for inheritance.

According to this reading, dynamicity is ruled out as being a temporal property because it is a property of change. Although it is true that dynamicity has to do with our experience of certain changes, most temporal experiences have to do with change. Succession, for instance, which along with duration is Phillips' prime example of an inherited temporal property, would be all but unintelligible without some reference to change. So it cannot be that we rule out a property as being a temporal property merely because it has a change-related component. Dynamicity is therefore at least as much a temporal property as succession is.

To fully defend premise 2, I must also make a case that dynamicity is seemingly presented in perceptual experience. In §2.1, I argued that dynamicity is a distinctive feature of temporal experience. Dynamicity not only seems to be a common feature of experience for people around the globe, but that it is supported by the psychological research. Nevertheless, dynamicity does have a few critics, most notably Christoph Hoerl.<sup>24</sup> Hoerl does maintain that there is a difference between noticing imperceptible changes (say, comparing one's memory of the hour hand to one's current view) and experiencing a string of successive perceptions, but this is all. There is nothing "over and above" the string of successive perceptions, nothing flowing or animated. Experiences do not seem, in short, to be dynamic at all.

I do not have scope to examine Hoerl's position in any great detail. I will simply point out the high cost involved of denying premise 2 for anyone who is inclined to think that their experiences of motion and change seem dynamic. Hoerl, indeed, occupies a very small minority of people who would do away with dynamicity as an apparent feature of experience. Even committed B-theorists such as Simon Prosser, who wish to explain all the features of temporal experience in terms friendly to the B-theory, admit that time

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<sup>24</sup> See Hoerl 2013 and 2014. Hoerl refers to the target phenomenon as "passage". As we have seen, this wording can lead to considerable confusion. It is clear, however, that the experience in question is not felt passage in general, but very specifically dynamicity: the feature of felt passage that has particularly to do with changes over short intervals of time. This is evident, as he maintains that the type of "passage" he wishes to undermine is "of the type... that is part of perceptual experiences of motion and change"(2014, p. 188).

seems dynamic.<sup>25</sup>

Furthermore, dynamicity may well have an even *more* persuasive claim to being an inherited temporal property than succession. Succession is, arguably, a property that seems to occur between or among experiences.<sup>26</sup> It does not seem to be a property of any single experience. An experience of thunder succeeds an experience of lightning. An experience of a dancer's plié is succeeded by a pirouette. But succession does not seem to be a property seemingly presented in any single experience. The pirouette is graceful or fluid or awkward or forced, but seems odd to call it successive.

On the other hand, the pirouette does seem dynamic. There is a distinctive experiential quality presented in the dancer's movements that requires change for its manifestation, but does not require one to appeal to more than one experience. For this reason, dynamicity is, if anything, an even more fittingly described as a temporal property of perceptual experience than succession. Succession would need to be characterized as a temporal property of perceptual *experiences*.

Given the plausibility of dynamicity as an apparent feature of perceptual experience, I turn now to premise 4. Premise 4, recall, was: if anything is dynamic, then the A-theory is true. This is where I anticipate many B-theorists will want to get off the boat. In what follows, I hope to demonstrate that premise 4 is not, after all, where the sleight of hand occurs. Once one accepts inheritance, the trick has already been done.

My imagined B-theorist will say something like the following. Of course things can be dynamic without the A-theory being true. Just look around. The ticking of the second-hand is dynamic, insofar as the clock possesses different qualities at different times. This is compatible with the B-theory. Things are dynamic in the only way they can be. Experience is “dynamic” in this B-theoretic way: insofar as it presents different properties to the mind at different times. Thus experience is, as it seems to be, dynamic. It is just not dynamic in any metaphysically robust sense.

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<sup>25</sup> See Prosser 2016, e.g. pp. 57-60

<sup>26</sup> It is not within the scope of this paper to provide a detailed account of experiential mereology. I appeal to the intuitive notion that consciousness is divided into distinct experiences, which are distinguished by temporal clusters of related experiential content.

I am not unsympathetic to this line of reasoning. But notice that there is one thing the B-theorist cannot say. The B-theorist cannot claim that there is anything dynamic about experience over and above the dynamicity provided by the succession of different properties at different times. There simply is nothing “more dynamic” than this, for her. Experience, insofar as it is part of the world, is just as B-theoretic as everything else. Felt dynamicity is—has to be—just a succession of experiences, at bottom. To ask for anything more than that, any metaphysical dynamicity, would be to ask for metaphysical passage. And this is something that the B-theorist cannot give.

However, when we experience felt passage, we seem to undergo more than just a succession of experiences. We seem to have something more than difference over time, something especially flowy, moving, lively. This, after all, is what dynamicity as an element of felt passage is characterized by: something more animated, more fluid, than mere difference over time. The property of dynamicity itself requires something more than a succession of experiences.

The B-theorist can grant that there seems to be some sort of dynamicity presented in experience, something that seems genuinely forward moving. What the B-theorist cannot do is grant that experience is genuinely forward-moving in any fundamental way. Because if experience itself has the property of dynamicity, then it has a certain movingness over and above B-theoretic difference over time. If experience is itself dynamic, then there is something which exhibits an A-property. And the B-theory denies this.

This problem would not arise given a rejection of inheritance. Once inheritance is jettisoned, it is easy to admit that there is some temporal property (dynamicity) that experience seems to have, but in fact lacks. Just as when our experiences seem to be red, or table-shaped, or triangular, the bearer of the news (experience) does not itself bear the relevant properties. Experience conveys dynamicity, and thus seems dynamic, without itself being any such thing.

Let us try a different tack. Let us grant that experience is genuinely dynamic. It still does not necessarily follow that the A-theory is true. Perhaps experience is unique in possessing the property of dynamicity. Maybe experience is dynamic at a fundamental

level, but everything else is B-theoretic. This way we can keep inheritance, without granting that there is any genuine dynamicity external to minds.

It is important to understand what an odd view this would be. It would be claiming that experiences are A-theoretic, but that everything else is B-theoretic. And this would create a good many mysteries. What would it mean to say that experience “really is” dynamic, when all the things our experiences are of (the ticking of clocks, the zooming of racecars) are not dynamic? There would need to be a sort of dual timeline, one A-theoretic timeline for experience and one B-theoretic timeline for everything else. Exactly how these two would interact (as they would need to, if our A-theoretic experiences were to be of anything veridical) is entirely unclear.

I grant that such a hybrid theory of time would require a good deal of explication and defense before it could be made attractive. However, I do not wish to reject the view out of hand. Perhaps the appearance of oddness has nothing to do with its philosophical plausibility (or lack thereof), but more to do with the fact that such a view is (as yet) unexplored. I hardly wish to eliminate a possibility from the realm of conceptual space merely because it is novel.

Without denying inheritance, then, it seems that there are only two ways to avoid the conclusion that the A-theory is true: one must either deny that experience has a dynamic element, or accept a strange hybrid theory of time. If neither of these seems particularly attractive, then one either ought to accept an A-theory of time, or reject inheritance. At the very least, if one grants inheritance, one must reject the B-theory of time.

Learning more about felt passage, about how time seems to us, can be extremely helpful for understanding the nature not only of experience, but also possibly the nature of time itself. Despite the fact that temporal experience is special, insofar as our experiences can have temporal properties in a way they cannot have other sorts of properties, it may well be that our experiences are not, even temporally, as they seem to be. Temporal properties may be presented in experience that the experiences themselves do not possess.

## Conclusion

The distinctions made in this paper will help clarify the debate about time. Once we understand the distinction between metaphysical passage and felt passage, it becomes easier to understand what the distinctive features of passage experience can tell us about the nature of time itself. But even if felt passage tells us nothing about metaphysical passage, it can still help us understand the structure of experience.

The dynamic element of felt passage coupled with the principle of inheritance, for instance, can lead us to the conclusion that experience itself is in fact dynamic. This surprising conclusion leads us to the realization that, as intuitive as the principle of inheritance appears at first, it is in fact incompatible with the B-theory of time.

There is much more to be gained from a careful analysis of felt passage. Dynamicity is the by far the most widely studied element of felt passage in both the philosophical and the cognitive science literature. The recognition that felt passage is in fact richer and more complex than mere dynamicity can not only give us a more nuanced and accurate picture of temporal experience, but may also provide avenues for a clearer understanding of human nature and the metaphysics of time.



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