Temporal experiences without the specious present[[1]](#footnote-2)\*

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# Abstract

Most philosophers believe that we have experiences as of temporally extended phenomena like change, motion and succession. Almost all theories of time consciousness explain these temporal experiences by subscribing to the doctrine of the specious present, the idea that the contents of our experiences embrace temporally extended intervals of time and are presented as temporally structured. Against these theories, I argue that the doctrine is false and present a theory that does not require the notion of a specious present. Furthermore, I argue that the different aspects of temporal experiences arise from different mechanisms operating separately. If the theory is true, then temporal experiences do not tell us anything special about the nature of consciousness and its temporal properties per se.

# Keywords

Specious present; Temporal consciousness; Phenomenology

# 1. Introduction

Everyday experiences, such as seeing traffic lights change and cars finally moving forward, suggest that we can perceive change and motion. Similarly, hearing two sequential knocks on a door can bring about an experience of a succession of events. Seeing a billiard ball hitting another can give the impression of causality. What is common to these experiences is that they imply the experience of the passage of time.

How to account for these experiences and related temporal phenomenology is the core of philosophical debates about time consciousness. Husserl placed great importance on this question and his assessment is shared by current philosophers.[[2]](#footnote-3) What makes the question challenging is that such temporal experiences have been difficult to explain within the simplest framework of the temporal properties of experiences. This is the *snapshot view,* according to which our experiences do not have any significant objective nor subjective temporal extension. Due to the (alleged) shortcomings of the snapshot view, the received view among philosophers is that what we are directly or immediately (i.e. without the aid of memory) conscious of—the contents of experiences presented to us as present[[3]](#footnote-4)—is not a knife-edge or punctate phenomenon, but consists of a temporally extended interval in which the contents appear as temporally or dynamically structured. This idea is known as *the doctrine of the specious present*.[[4]](#footnote-5)

The theories that subscribe to the doctrine of the specious present can be classified into two types. According to the *retentionalist model* (or the intentionalist model), the contents of our experiences are temporally extended but experiences themselves lack any duration significant in the sense that it would play any role in determining the contents of experiences. Thus, what we experience in an instant appears to us as a temporally extended interval. *The extensionalist model* holds that both experiences and their contents stretch over an interval, often the same interval. Given that most philosophers accept the doctrine of the specious present, the debate concerning time consciousness has focused on the plausibility of versions of these models and whether they can, for example, accommodate the continuity of the stream of consciousness.[[5]](#footnote-6)

In this paper, I will argue against the doctrine of the specious present and propose an explanation for temporal experiences that does not require the notion of the specious present. Thus, instead of engaging with the debate between the extensionalist and retentionalist models, I will argue against both models by questioning their underlying doctrine. I begin by explaining why philosophers have adopted the doctrine. This is followed by a presentation of the new theory, which I call the *dynamic snapshot view*. The reasons for rejecting the doctrine of the specious present and endorsing the dynamic snapshot view are then considered in section four. In short, it will be argued that the empirical evidence and theoretical considerations based on them suggest that (i) the contents of our experiences are not temporally extended, (ii) the notion of the specious present is not required to explain temporal phenomenology and (iii) the notion cannot explain all instances of temporal phenomenology. I end by considering the view that emerges, an objection to it, and how it relates to current theories of consciousness.

# 2. The motivation for the doctrine of the specious present

According to the snapshot view, each episode of experiencing and its contents are confined to a snapshot of what happens in an instant of time. The best-known version of the view, *the cinematic model*, holds that each experience is quite literally like a frame in a movie. This means that our experiences include only the kinds of contents a movie frame can include, namely colours, shapes and other non-dynamic features.

It is generally accepted that the cinematic model cannot account for the temporal phenomenology. Consider, for example, an auditory experience of succession brought about by two suitably-presented knocks. According to the cinematic model, we have a succession of experiences related to these auditory stimuli; we hear the first knock and then the second. The succession of experiences and the experience of succession are two different things however.[[6]](#footnote-7) Thus what is missing from the picture that the cinematic view provides is the experience of succession itself. The experience of motion remains similarly unexplained since the cinematic model reduces the experience of movement to mere succeeding experiences of an object at different places at different times. Yet, ‘it is a notorious fact that we do not merely notice that something *has* moved or otherwise changed; we also often see something *moving* or *changing*.’ (Broad, 1923, p. 351) Hence, the cinematic model neglects the temporal phenomenology. It is therefore not surprising that Thomas Reid (1850), who endorses a view similar to the cinematic model, maintains that strictly speaking we do not experience change, motion and succession. Instead, these dynamic features are merely inferred from the successive experiences with the aid of memory.

However, most philosophers writing about temporal phenomenology maintain that change, causality and motion are all something that we can directly experience. Succession, for example, is not merely inferred with the aid of memory but ‘within certain limits, is as much given as the events’ that are experienced to succeed one another (Russell, 1914, p. 93). Dainton (2010) calls this position *Phenomeno-temporal Realism.* Many have found it prima facie plausible and it can also be substantiated by psychological experiments (section 4.2.).

The received view among philosophers is therefore that the experiences of temporal phenomena are distinct from the inferences about temporal phenomena based on non-temporal experiences. As long as the cinematic model is the only well-developed version of the snapshot view and the model cannot account for temporal phenomenology, it is reasonable to pursue other frameworks in which our temporal experiences can be explained. This leads to the doctrine of the specious present, the idea that the contents of our experiences appear to us as temporally structured and not confined to what takes place in snapshots. Accordingly, James (1890, p. 574) argued that ‘[i]t is only as parts of [the specious present] that the relation of *succession* of one to the other is perceived.’

If we are conscious of an extended interval, it follows that the contents of our consciousness appear to us as temporally (or dynamically) structured. Otherwise all the contents within one specious present would be experienced as simultaneous. This apparent temporal structure in which the contents are embedded is considered separate from the contents and fundamental to consciousness. As James (1890, p. 630) states, while the contents within the specious present constantly change, ‘the specious present, the intuited duration, stands permanent, like the rainbow on the waterfall, with its own quality unchanged by the events that stream through it.’

The doctrine of the specious present explains how two phenomenal contents can appear to occur at different times and yet be experienced together. For instance, when we experience succession, one specious present can comprise the contents of both a just-past knock and a knock as occurring now. Because these two contents belong to the same specious present, we also have an immediate experience of the second knock succeeding the first one. Likewise, when looking at traffic lights, there can be a specious present with the contents of a just-past red light and a current green light. Because the contents differ but belong to the same specious present, we experience the change as directly and immediately as we experience the redness and greenness.

There is obviously much more to be said about the doctrine of the specious present. We can set aside those issues here, however, because for our purposes the crucial point is that the motivation for adopting the doctrine emerges from the need to account for temporal phenomenology. First, if Phenomeno-temporal Realism were incorrect, there would be no need to adopt the doctrine. Second, since the only well-developed version of the snapshot view cannot account for the phenomenology, there is seemingly no alternative but to appeal to the idea of the specious present. Then again, if some version of the snapshot view can account for the temporal phenomenology, this would undermine the main motivation for the doctrine of the specious present. The focus would thereby turn away from the plausibility of the extensionalist model versus the retentionalist model to the question of whether there are justified reasons to adopt the doctrine of the specious present in the first place. I will next introduce an alternative version of the snapshot view and then argue why it is preferable to theories subscribing to the doctrine of the specious present.

# 3. The dynamic snapshot view

We can begin out considering the waterall illusion. It is a motion aftereffect in which, after watching a waterfall for a while, a stationary object appears to move and not move at the same time. Robin Le Poidevin (2007, p. 89) suggests that ‘two neural mechanisms are involved here, one for detecting motion and the other for detecting change of position.’ The first one ‘gives rise to the impression of motion without any associated sense of change of relative position.’ Le Poidevin calls such an impression *pure motion*. The second mechanism ‘employs short-term memory, takes a series of snapshots of an object’s relative position and compares them’ (2007, p. 89), and in this way detects the changes in the object’s position. These mechanisms are independent—Le Poidevin calls the first mechanism “primitive”, which I take to mean something like an automatic and encapsulated mechanism. Hence the first mechanism can provide the impression of movement while the second gives the impression that the object’s position remains the same.

The two mechanisms also figure in Le Poidevin’s explanation of ordinary motion perception, only in this case the second mechanism gives the impression that object positions change. The merits of this explanation include that it is grounded in a well-known phenomenon and it takes temporal phenomenology seriously. Moreover, it holds that motion can be part of the phenomenology of perceptual experience in the form of pure motion. For the topic at hand, the most significant aspect of this explanation is that the experience of motion is explained in a framework where the contents can subjectively speaking be confined to an instant. This follows from the fact that, as the waterfall illusion exemplifies, we can have an experience of motion without an object appearing to us as being in different places at different times. Phenomenal contents that appear to us as temporally spread out over time simply do not play a role in us having an experience of pure motion.

I propose that all temporal phenomenology can be explained comparably by appealing to the existence of automatic, encapsulated and domain-specific mechanisms. Here I depart from Le Poidevin’s account whose explanation for temporal phenomenology involves a general mechanism, namely short-term memory. The central theses of my theory can be expressed as follows:

1. *Realism about temporal phenomenology*: We have immediate experiences of change, motion and other temporal phenomena, as the majority of philosophers claim.
2. *Punctuality of phenomenal contents*: Our experiences do not appear to us as temporally extended in any significant way, meaning that what we experience is a knife-edge.
3. *Purity of temporal phenomenology*: Temporal phenomenology is pure in a sense that experiences of change, motion and other temporal phenomena can occur without an associated phenomenology of things being different at different times.
4. *Encapsulated mechanisms*: Temporal phenomenology is brought about by primitive mechanisms, each separate from another.

Since thesis (i) has been discussed above, the next sections will focus on the reasons to hold the more original theses (ii)-(iv) and on elaborating their consequences for the doctrine of the specious present. However, some of the aspects of the theses are worth emphasizing already at this point.

The first two theses describe the theory at a general level. The *first* thesis separates the view that I propose from the cinematic model, which denied the reality of temporal phenomenology. The *second* thesis means that the snapshot view is adopted and the doctrine of specious present is rejected. Unlike in the cinematic model, here a snapshot can (but does not have to) include contents that a frame in a movie does not allow (namely, pure temporal phenomenology). As these contents are dynamic, I call my theory *the dynamic snapshot view* (Arstila, 2016).

The third and fourth theses are more specific. The *third* thesis highlights the lesson from Le Poidevin’s explanation of pure motion, according to which we can have an experience of movement without an experience whose contents are temporally spread and include an object at different locations at different times. The third thesis extends this idea to cover all temporal phenomenology. For example, the claim entails that we can have an experience of pure change—an experience that a change has occurred—without being aware of what the change was.

The *fourth* thesis maintains that the temporal phenomenology is the result of the operation of encapsulated mechanisms, rather than a general mechanism. Thus the thesis separates the dynamic snapshot view from Le Poidevin’s account, according to which the second mechanism involved in the waterfall illusion is short-term memory and ‘the conjunction of the very recent memory of [first stimulus] with the perception of [second stimulus] gives rise to an experience of “pure succession”’ (2007, p. 91).[[7]](#footnote-8) On my account, both pure motion and pure succession are explained by appealing to a primitive mechanisms specific to those experiences. For example, the second mechanism involved in the waterfall illusion is likely to be a second-order motion processing mechanism (Mather, Verstraten, & Anstis, 1998). The reasons why short-term memory cannot play the role Le Poidevin intends it to play and why it should be distinguished from the mechanisms that give rise to temporal phenomenology are advanced in sections 4.2. and 4.3.

It is important to note that the thesis does not forbid us from having ongoing memories related to past events. Instead, the claim is that such cognitive processes do not play any role in establishing our temporal phenomenology. Thus according to the dynamic snapshot view, when we have an ongoing experience and also some (short-term) memory of what just occurred, it is a mistake to conclude that the two types of mental states are intrinsically related in a way that memory is required for the temporal phenomenology to occur.[[8]](#footnote-9) Moreover, the thesis does not mean that some information about the past experiential contents would not be needed for (for the usual cases of) the experiences of change, succession and so forth either. However, this would amount to something similar to lingering information in specific mechanisms, and something unlike lingering information or retention in short-term memory.

Two important consequences of the thesis are that different aspects of temporal phenomenology are governed by different temporal thresholds—this implies that temporal phenomenology does not tell us anything about the temporal properties of consciousness itself—and that if none of the encapsulated mechanisms provide us any phenomenal content, then we do not have an experience of a dynamic event at that time. Both consequences further separate the dynamic snapshot view from the other theories of time consciousness that are realist about temporal phenomenology.

# 4. Three theses of the dynamic snapshot view

## 4.1. The punctuality of phenomenal contents

According to the doctrine of the specious present, the contents of our experiences are presented as temporally structured since the experience includes current phenomenal contents and just-passed phenomenal contents (or, preceding and succeeding contents). Empirical studies suggest, however, that the past phenomenal contents are not available to us in any significant manner. That is, what we experience does not include just-past phenomenal contents. This conflicts with the doctrine and provides support for the snapshot view. Let me begin by first describing the relevant studies and only then turn to their significance for the topic at hand.

In a series of studies, Vincent Di Lollo (Di Lollo, 1980; Di Lollo & Wilson, 1978) presented twenty four dots/flashes on a five-by-five matrix to their subjects. The subjects’ task was to identify the missing dot. Performance in this task ‘depends critically on the simultaneous perceptual availability of all twenty-four dots.’ (Di Lollo & Wilson, 1978, p. 1607) The experiment that pertains most directly to the topic at hand is the following.[[9]](#footnote-10) The dots were shown in two flashes. The leading display comprised twelve dots, chosen in random from twenty-five possible ones, and the trailing display comprised twelve dots, chosen in random from the thirteen remaining possible dots. The experimental condition that varied was the duration of the leading display (10, 40, 80, 120, 160, 200 milliseconds). After its offset, first an empty screen and then the trailing display was presented, both for ten milliseconds. That is, the experimental conditions differed only as regards the period of time the leading display is presented before being succeeded by the empty screen and the trailing display.

The results showed that the subjects performed almost without error in the conditions where the leading display lasted 80 milliseconds or less. This shows that the task was not too demanding to begin with. For longer leading display durations, the performance was markedly worse and decreased fast. Moreover, when the leading display lasted 120 milliseconds, almost eighty percent of the misidentified dots belonged to it. For 160 and 200 millisecond leading displays, the number was higher. In another experiment where the dots were shown one at a time, the misidentified dots were almost always those that were shown more than 120 milliseconds before the last dot. Thus, ‘the finding to be explained is the immediate loss of perceptual availability upon termination of a display that has been on the view for longer than about 100 msec.’ (Di Lollo, 1980, p. 90)

Di Lollo explains the results by suggesting that the presentation of a stimulus triggers sensory coding mechanisms responsible for processing and identification of the stimulus. These processes last roughly 100 milliseconds and the stimulus is perceptually available to a subject during that time.[[10]](#footnote-11) Thus if a stimulus lasts only 10 milliseconds, it is perceptually available for an extra 90 milliseconds or so. If the stimulus lasts longer than 100 milliseconds, there is no need for the sensory coding mechanisms to process it again. Instead, the mechanisms ‘can distinguish “new” from “old” contours’ (Di Lollo, 1980, p. 94)—possibly by comparing the incoming sensory signals to the already processed ones—and the information about the presence of already processed stimulus is simply maintained. Because the information of a stimulus that lasts longer than 100 milliseconds is simply maintained as long as it is presented, the perceptual availability of such a stimulus disappears together with the offset of the stimulus. For this reason, the information about the leading display can disappear within ten milliseconds.

The crucial part of Di Lollo’s findings is that the perceptual availability of a stimulus depends on the time that has passed since the stimulus was first noticed. This is explained by making perceptual availability a matter of processing that begins with the onset of a stimulus and that takes a certain amount of time. The doctrine of the specious present, by contrast, seems to be committed to the view that what matters for the perceptual or intentional availability of the stimulus is its offset, not its onset. This is for the reason that when the presentation of the stimulus ends, our experience of the offset is thought to change from occurring now to just-occurred and then to further past—the end of an event lingers in our consciousness as long as the specious present lasts.[[11]](#footnote-12)

Di Lollo’s results are therefore in conflict with the doctrine of the specious present. First, the trailing display was presented ten milliseconds after the leading display in all experimental conditions. Accordingly, if the doctrine is correct, the trailing display would change from occurring now to just-occurred and then to further past in the same way in all experimental conditions and the performance should remain the same throughout the experiment. This is not the case however. Second, if the doctrine is correct—if there is a ‘short duration of which we are immediately and incessantly sensible’—then the information about the leading display should not disappear at the moment when we first have experiences of the trailing display. After all, such disappearance means that the information about the leading display is not immediate and sensible anymore. Nevertheless, this is exactly what happened for longer leading displays. This suggests that the punctuality of phenomenal contents is correct.

To make this objection more concrete, let us consider two ways in which just-past phenomenal contents can figure in the specious present. According to *the Non-Modal conception*, all contents within one specious present ‘appear equally present (they all seem equally vivid)’ (Dainton, 2008, p. 380). This view is demonstrably false in the light of the previous results: when the leading display lasted 120 milliseconds or longer, the misidentified dots belonged to the leading display eight to nine times more often than to the trailing display. Yet, if the phenomenal contents of the leading display were present in a comparable (not to mention the same) fashion as the phenomenal contents of the trailing display, there should be no such discrepancy. According to *the Modal conception*, contents within one specious present are presented under different temporal modes and thus they do not appear equally vivid—within one specious present, current contents are more vivid than just-past contents that in turn are more vivid than further-past contents (Dainton, 2008, pp. 373–379). If, however, we lose the just-past phenomenal contents and the further-past phenomenal contents—or perceptual availability as Di Lollo suggests—in less than ten milliseconds after we experience the offset of stimuli, it is unclear that there is any sensible notion of temporal mode of presentation. For instance, we usually cannot separate the temporal order of stimuli that are less than ten milliseconds apart (Hirsh & Sherrick, 1961). (See Dainton (2008) for further arguments against the Modal conception and Arstila (2016) for problems concerning the notion of the temporal modes of presentation.)

This objection against the doctrine of the specious present does not pertain to two theories that subscribe to the doctrine, however. Thus one might try to defend the doctrine building on those theories. The first response begins by arguing that the results only show the loss of perceptual availability of the dots after ten milliseconds, not the immediate loss as Di Lollo argues. This does not help the currently endorsed theories, all of which postulate that the temporal spread of the specious present is 20 to 300 times longer than ten milliseconds (see section 4.3), but Broad’s early theory (1923) is compatible with such interpretation. However, as J.D. Mabbott (1951) showed, this would necessitate that the episodes of experiencing are much longer than the duration of the experienced contents. Mabbott and others after him have found such consequence questionable, and even Broad himself ended up arguing for an alternative theory later on. Furthermore, if the temporal spread of the contents of the specious present is only ten milliseconds, then the specious present could not account for the experiences of causality, succession and so forth (see the following sections).

The second response to the objection is based on “the discrete block model” endorsed by Timothy Sprigge (1983). It maintains that the specious presents succeed each other discretely so that two succeeding specious presents do not include the same contents. If we accept this view and make the further assumption that the change from one specious present to another coincides with the presentation of the trailing display, then the information of the leading display would be absent at the time the trailing display is presented.

Although this explains the loss of the perceptual availability related to the leading display, the proposal is problematic for several reasons. First, the idea that the contents of succeeding specious presents are experientially isolated has the consequence that we would not experience the temporal relation between the contents belonging to different specious presents. This is phenomenologically implausible (Dainton, 2010). Second, there is very little empirical evidence for the idea that mental states succeed each other discretely. Third, the assumption that a new specious present coincides with the presentation of the trailing display is in the need of justification. The only explanation that is not ad hoc, according to which the leading display triggers a new specious present that has the temporal spread of roughly 100 milliseconds, is inadequate because in this case the notion of the specious present would not explain the experiences of phenomena lasting for more than 100 milliseconds (see section 4.3). Finally, it is worth noting that only one experiment by Di Lollo was examined in detail above. In some of his other experiments, the dots presented before the trailing display were presented one-by-one. If the discrete block model would be correct, then those contents that belong to the same specious present would cease to be experienced at the same time. This means that the likelihood of misidentifying some of the contents of experiences, namely those that are part of the same specious present, should be the same. The results suggested, however, that the loss of perceptual availability is linked to the processing cycle of each particular dot.

## 4.2. The purity of temporal phenomenology

Di Lollo’s results suggest that some version of the snapshot view is correct. Assuming that temporal phenomenology exists, the cinematic model is ruled out and we are left with the dynamic snapshot view. The plausibility of this view, in turn, depends on whether pure phenomenology occurs for all kinds of temporal experiences.

The waterfall illusion demonstrates that this holds in the case of motion; we do not need to see an object changing its location in a continuous manner as a function of time in order to have experiences of motion. Other well-known motion illusions corroborate the claim. In the rotating snake illusion, for example, a stationary stimulus brings about an experience of movement. In so-called pure motion experiments, two stimuli shown in succession without any temporal gap between them often induce the experience of movement without subjects seeing anything that moves (Hoerl, 2015; Wertheimer, 2012). The dissociation of experienced motion and position of an object is also highlighted by the fact that it is even possible to experience a stimulus to move in one direction while its position is experienced to shift in the opposite direction (Bulakowski, Koldewyn, & Whitney, 2007).

Psychophysical and neurophysiological studies suggest that our awareness of change consists of two separate things too: On the one hand, there is “sensed change”, the feeling that something has changed, the phenomenology of change, on the other hand, there is “seen change”, the awareness of what it is that has changed (Rensink, 2004). Because the two are separate, people can have the experience of pure change (i.e., sensed change) even though they have no experience of what it is that has changed. Hence Felix Ball and Niko Busch (2015, p. 2587), for example, write that we can have experience ‘that *something* has changed *somewhere* without knowing what or where’. One explanation for how this can happen is that a purely visual, encapsulated mechanism registers the initial stimulus and the latter stimulus.[[12]](#footnote-13) If they differ, the mechanism tokens a signal that a change has occurred and this signal is available to higher-level processes. However, the information leading to this signal—the retained information about the initial stimulus and how the stimuli differed—need not be available at this point. Consequently, we have an experience that there was a change without us seeing what the change was. Since the experience of change results from a similar mechanism as pure motion and can take place without an associated phenomenology of things being different at different times, the experience of change too can be accounted for in the framework of the dynamic snapshot view.

It is also well established that people report having lively experiences of causality, which scientists call perceptual causality, and that these experiences differ from inferred or attributed causality on a behavioural and neurophysiological level. For example, they have a different temporal profile: we cease to experience causality if the temporal interval between the cause and effect is more than 100-150 milliseconds, whereas the estimations for the interval during which we attribute rather than perceive causality depends on working memory and is around three seconds. Crucially, perceptual causality is considered ‘as being an inherent property of the visual system akin to processes such as visual grouping, and illusory contour completion’ (Fugelsang, Roser, Corballis, Gazzaniga, & Dunbar, 2005, p. 45) and ‘is independent from higher-level processes, but . . . the output from these visual regions is available to be read and interpreted’ (Fonlupt, 2003, p. 253). Accordingly, the explanation provided for perceptual causality appeals to a mechanism analogous to the mechanism accounting for sensed change: both result from visual processes rather than more central and general mechanisms (like memory as Le Poidevin would have it). Moreover, similarly to the mechanisms related to visual motion perception, the mechanism of perceptual causality is considered modular. Thus, although there have been no investigations about whether pure causality (if understood as the impression of causality in the absence of the perception of *any* preceding stimulus) exists, the mechanism behind it is consistent with such possibility.

To my knowledge it has also not been investigated whether a similar situation obtains in the case of experiences of succession. There are grounds to speculate that it does, however. In particular, people can tell that two auditory stimuli are asynchronous when they are presented a mere 2 milliseconds apart. However, if the asynchrony is less than 30 milliseconds, they cannot tell which one of the stimuli was presented first (Hirsh & Sherrick, 1961). Given that it is generally agreed upon that we can have experiences of succession, one way to describe this situation is that the two stimuli appeared asynchronously for the subjects simply because they have the experience of succession. However, because they do not have the corresponding awareness of which stimulus succeeded the other, this amounts to having an experience of pure succession.

The idea of the purity of temporal phenomenology, the third thesis of the dynamic snapshot view, is therefore well justified on empirical grounds. First, pure temporal phenomenology exists as regards change and motion. The similarity between the mechanisms behind perceptual causality and sensed change supports the possibility that pure causality exists too. Finally, the argument that pure succession exists is not implausible either. Provided that experiences of motion can be explained by appealing to pure motion, it is also possible to explain our experiences of change by appealing to pure change (i.e. sensed change) and experiences of causality by appealing to pure causality (i.e. perceptual causality). Therefore, contrary to the claims made by those endorsing the doctrine of the specious present, temporal phenomenology can be accounted for without appealing to the specious present.

The existence of pure temporal phenomenology challenges the theories that subscribe to the doctrine of the specious present, however, because the theories cannot currently explain the situations where we experience pure change without seen change, or experience pure motion without experienced change in the position of an object. Dainton (2000, p. 176), for instance, maintains that we experience a ball moving because we are co-conscious of the phenomenal contents depicting the ball at different locations at the different times and such contents are temporally patterned because of the (alleged) intrinsic dynamism of the specious present. Conversely, if we are presented with a stationary stimulus, then our specious present depicts the stimulus at the same location at different times and the intrinsic dynamism of the specious present should not bring about the experience of movement. Motion illusions demonstrate, however, that a stationary stimulus can be experienced to move and the experienced motion and the shift in position can even go in the opposite directions. Similar problems arise with respect to other kinds of pure temporal phenomenology: if we have the experience that something has changed ‘without a visual experience of the changing object’ (Ball & Busch, 2015, p. 2585), then even if what we experience is temporally extended, the phenomenology of pure change remains unexplained because the phenomenal contents do not differ. It is worth noting that this shortcoming affects Le Poidevin’s memory account too: if the experience of change is brought about by current experience with ‘the conjunction of the very recent memory of [the previous stimulus]’, then it cannot explain how it is that we have experiences of change when our memory of the previous stimulus matches our current experience.

This objection can be responded to in two ways, both of which I think are unsatisfactory. First, one could argue that the specious present is supposed to describe rather than to explain the temporal structure of experiences. This view allows temporal phenomenology to be explained by means other than the specious present and thus the possibility that our experiences are temporally extended is not challenged. Then again, temporal phenomenology was the reason the doctrine was proposed in the first place and if this phenomenology is explained without the specious present, then there is no motivation to accept the doctrine.

The second way to respond is to extend the current theories to explain pure temporal phenomenology in the same way as the dynamic snapshot view does. However, such a theory would commit itself to mechanisms that can be used to account for temporal phenomenology without the specious present—again the reason to subscribe to the doctrine is gone. This conclusion could be avoided if pure temporal phenomenology differs from the usual temporal phenomenology and the specious present would be needed to explain the latter. This seems unlikely, however, because it is motion that subjects describe experiencing in pure motion experiments and change in the sensed change experiments. One subject of Wertheimer’s pure motion experiment, for example, described the experience as saying that ‘the passage across, the compelling motion from *a* to *b*, is there clear and distinct, strong and entirely continuous’ (Hoerl, 2015, p. 9). This suggests that the phenomenology does not differ in respect to *motion* in pure and usual cases, even though it did differ as regards colour and size properties in some parts of the visual field.

In a nutshell, it has been argued that all temporal phenomenology has a pure form, not just motion perception. In the light of the argumentation in section 3, where the experiences of motion were explained by appealing to pure motion and thus without subscribing to the doctrine of the specious present, we can now generalize this conclusion and explain all temporal phenomenology without subscribing to the doctrine of the specious present. That is, by adopting the dynamic snapshot view. At the same time, however, the theories that subscribe to the doctrine, and Le Poidevin’s memory view, fall short of accounting for our temporal phenomenology. Then again, if they are amended to incorporate pure form of temporal phenomenology, then there is no obvious need to subscribe to the doctrine of the specious present.

## 4.3. The encapsulated perceptual mechanisms and the duration of the specious present

Assuming the doctrine of the specious present is correct, we are justified in asking what the interval is that one specious present covers. Dainton (2000) argues for half a second. Lockwood (2005) claims that the duration is between one second and one second and a half. James (1890) maintained that the specious present can be up to twelve seconds long. Psychologists Ernst Pöppel (1988) and Marc Wittmann (2011) argue for a notion similar to specious present that lasts around three seconds.

Each of these estimations is based on different temporal phenomena. Dainton’s view is motivated by the experience of succession: if the interval between two knocks is longer than a half second, then we do not have an experience of one succeeding the other (Dainton, 2000). Husserl (1991) and Gallagher (2003), in turn, maintain that we can directly experience certain durations. Our performance in the various duration tasks and tasks involving rhythms, suggest that the durations we can feel should not exceed (roughly) three seconds (Pöppel, 1988). Finally, as discussed above, perceptual causality is lost when the temporal gap between cause and effect is 150 milliseconds. Thus, based on this phenomenon, one could argue for a much shorter duration of the specious present and such a position would be just as defensible as any other estimation.

The consequence of these different temporal thresholds is that whichever would be the correct one, some phenomena that philosophers of time consciousness have been interested in will remain unexplained. If the duration of the specious present is half a second, then the experience of succession can be explained. Simply denying that we can experience durations and rhythm that last longer than that does not solve the problem because it also remains unexplained why we do not have an experience of causality if the interval between cause and effect is greater than 250 milliseconds. Then again, if one specious present lasts 150 milliseconds, we need to deny Phenomeno-temporal Realism of most temporal experiences. Thus, it appears that all estimations of the duration of the specious present lead to insurmountable problems.

One might think that the issue can be solved by allowing the duration of the specious present to be flexible. This is not the case, however. One problem concerns the mechanisms determining the length of each specious present: how do we settle beforehand when the second stimulus, if there is such, might appear so that each specious present is suitably extended to include it and bring about and experience of causality or succession? A more concrete problem follows from the fact that one could be shown two types of stimuli at the same time. Let us assume that one stimulus is used to induce the experience of succession and the other is similar to those bringing about the experience of causality. If the separation used in the stimuli is 300 milliseconds, we experience succession. Hence the specious present in this case covers at least a 300-millisecond interval. But then it remains unaccounted for why causality is not experienced too.

One might also argue that there are two different specious presents at play. This response concurs with the idea that the specious present has different lengths in different sensory modalities. This has been suggested in the passing by Gallagher and Dainton, because of the systematic differences in the duration estimations concerning auditory stimulus and visual stimulus. Alas, the idea of there being two different specious presents at play at the same time would have the unwanted consequence that, contrary to those subscribing to the doctrine of specious present, the specious present would no longer be the unvarying temporal structure of unified consciousness it has been thought to be (as discussed in section 2). Furthermore, this idea would also be at odds with the unified cross-modal nature of our experiences exemplified for instance by a famous McGurk’s effect, in which seeing a person uttering “ga” alters the auditory phoneme perception of the syllable “ba” so that what most people hear is “da”. The same consequences would follow if different aspects of temporal phenomenology are explained in terms of separate mechanisms.

Le Poidevin’s claim that temporal phenomenology is brought about by current perception with ‘the conjunction of the very recent memory of [the previous stimulus]’ is subject to the same objection. Without arguments to the contrary, it is reasonable to assume that such memory would have equal duration in all cases. But then it remains unexplained why the thresholds for various temporal experiences differ. Related to this issue, it remains also a mystery why inferred and perceptual causality have different thresholds if both phenomena require memory.

Different temporal thresholds for mechanisms underlying our temporal phenomenology are no problem for the dynamic snapshot view, however. This is because temporal phenomenology results from pure temporal phenomenology, and the latter is due to separate mechanisms—the ones that are specific to the phenomenology in question. That is, whereas the doctrine of specious present amounts to the claim that the temporal structure of consciousness grounds all temporal experiences, the dynamic snapshot view argues for the encapsulated mechanisms behind temporal experiences. Since different experiences are brought about by different mechanisms, they can have different thresholds. As a result, temporal experiences do not tell us anything about the temporal properties of consciousness per se.

# 5. Summary and further considerations

The received view among philosophers is that we can experience change, motion and other dynamic events with the same immediacy than we can experience colours and shapes. With the exception of Le Poidevin, it is further argued that temporal experiences can be explained only in the framework of the doctrine of the specious present. I have argued against this latter claim by providing reasons to believe that the contents of our experiences are not temporally spread (section 4.1.), showing that temporal phenomenology can be explained without the notion of the specious present (sections 3. and 4.2.) and demonstrating how the doctrine, even if true, would not provide an explanation for the whole of temporal phenomenology (sections 4.2. and 4.3.).

The reasons to reject the doctrine of the specious present also form the basis of the dynamic snapshot view. Hence this view agrees with the received view that temporal phenomenology is real, but explains it in the framework where phenomenal contents are confined to snapshots. This is done by generalizing from the experiences of pure change and pure motion. The view that emerges is one where temporal phenomenology related to change, motion and succession concerns basic phenomenal qualities, while having temporal experience does not require that experiences possess some apparent temporal structure. Because temporal phenomenology results from separate mechanisms, different temporal experiences can have different temporal thresholds.

Because the doctrine of the specious present is so widely held, the objection presented in section 4.1. against it is likely to be met skeptically. Hence it is worth emphasizing that even if this objection is overlooked, the more constructive latter sections illustrate how the temporal phenomenology can be accounted for without the doctrine of the specious present. Accordingly, even if Phenomeno-temporal Realism is true, the doctrine of the specious present does not need to be subscribed to. Therefore, those who endorse the doctrine need to provide new justification for doing so.

As this paper has focused on presenting and defending the key theses of the dynamic snapshot view, several important ensuing issues remain unaddressed. These include a more thorough discussion of the relations between short-term memory, sensory persistence and consciousness, as well as the consequences of the view and objections to it. Unfortunately addressing these issues requires more space than available. Thus, let me end by briefly mentioning only one objection to the view and one merit of the view.

First, the objection. James and Dainton claim that our stream of consciousness is continuous in two ways: there are no gaps in the stream of consciousness and that, in addition, we experience the continuity itself (the continuity of experiences is not the experience of continuity). Although all theories of time consciousness can explain the first one—one snapshot or specious present can follow another seamlessly—Dainton has furthermore argued that only his theory can explain the latter. The details of his arguments are not important here. Instead, what matter is that if his point holds, all other theories of time consciousness (including the dynamic snapshot view) are phenomenally implausible. It is not apparent, however, that Dainton’s claim about the experienced continuity should be accepted. After all, continuity as a freedom of gaps between succeeding snapshots or specious presents agrees with what most philosophers have written about the continuity (namely, the continuity of experiences without the experience of continuity). Hence before James and Dainton can convince others that their view on the phenomenology of continuity is the correct one, which they demonstrably have not done thus far, this objection does not force one to reject the dynamic snapshot view.[[13]](#footnote-14)

Second, let us consider the merit of the dynamic snapshot view: In addition to agreeing with the empirical research mentioned above, the view is compatible with the major theories of consciousness (for example, the dissociative theory of consciousness, the global workspace theory and higher-order theories of consciousness). Despite the differences between these theories of consciousness, they share one common feature: they are temporally ‘thin’ as in all of them the contents of our conscious experiences are determined by the ongoing neural activation and experienced as occurring at that instant. This does not mean that the theories could not be amended to incorporate the doctrine of the specious present. However, before that is done, only those theories of time consciousness that do not postulate any temporal structure to consciousness concur with the current line of consciousness research.

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1. \* This is a penultimate draft of “Temporal Experiences without the Specious Present”, *Australasian Journal of Philosophy*. 2017. [dx.doi.org/10.1080/00048402.2017.1337211](http://dx.doi.org/10.1080/00048402.2017.1337211). Please cite the published version. [↑](#footnote-ref-2)
2. Husserl (1991, p. 346) regarded these as ‘perhaps the most important [matters] in the whole phenomenology’. Several other noteworthy philosophers have written about the topic too, including, for example, Barry Dainton, Bertrand Russell, C.D. Broad, Dan Zahavi, Franz Brentano, John McTaggart, John Foster, Shaun Gallagher, Thomas Reid and William James. [↑](#footnote-ref-3)
3. I use content to refer to the sensory occurrences a subject has. During one experience, whether it is a snapshot or specious present, one is usually conscious of several phenomenal contents (i.e. colour, shape, location of objects). [↑](#footnote-ref-4)
4. The idea that the contents of consciousness are not confined to (near-)momentary contents was brought into the spotlight by James (1890) who argued that there is a ‘short duration of which we are immediately and incessantly sensible’. Since the doctrine concerns the temporal structure of contents as they are presented in experience, not the physical duration or temporal structure of experiences themselves, and what we experience as present extends over time, this present is *specious,* not present in a mathematical sense. [↑](#footnote-ref-5)
5. Philosophers who implement the doctrine of the specious present in the extensionalist framework include, for instance, Dainton, Foster and possibly James too. Philosophers who implement the doctrine in the retentionalist framework include Gallagher, Husserl and Zahavi. [↑](#footnote-ref-6)
6. James (1890, pp. 628–9) expresses this as follows: ‘A succession of feelings, in and of itself, is not a feeling of succession. And since, to our successive feelings, a feeling of their own succession is added, that must be treated as an additional fact requiring its own special elucidation.’ [↑](#footnote-ref-7)
7. Both Reid and Le Poidevin claim that in the case of succession, our current experience is supplemented with the memory of the prior experience. However, whereas Reid argues that this brings about an *inference* that succession took place, Le Poidevin argues that this brings about an *experience* of pure succession. Prosser (2016) has recently put forward a theory of temporal experiences that is very similar to Le Poidevin’s theory, including the emphasis on short-term memory. [↑](#footnote-ref-8)
8. Hearing a melody is a possible exception since accounting for it may require working memory. However, in this case the memory must extend much further into the past than current theories subscribing to the specious present argue that the specious present extends. [↑](#footnote-ref-9)
9. The described experiment is (Di Lollo, 1980, experiment 1). The experiments reported in two papers varied on (i) the nature of stimuli (dots or flashes), (ii) how the stimuli were shown (in groups of six, twelve or sequentially one by one), (iii) the duration of the leading display and (iv) the temporal gap between the leading and trailing displays. The results of these experiments support the results of the discussed experiment and Di Lollo’s interpretation of the results by ruling out many alternative interpretations (e.g. the suggestion that the results are only due to inverse persistence). [↑](#footnote-ref-10)
10. Di Lollo emphasizes that his explanation concurs with Robert Efron’s (1970) results that the minimum duration of visual experience is 120-240 milliseconds. Efron’s results do not show that our phenomenal contents are temporally extended, however, because such a period does not need to be experienced as a whole. [↑](#footnote-ref-11)
11. The doctrine of the specious present is thought to explain our experiences of duration, melody and persistence (e.g., Dainton, 2008; Hoerl, 2015). This requires that both onset and offset of things are tracked—otherwise we could not separate, say, short and long notes on a melody—and hence both onset and offset matter for those subscribing to the doctrine of the specious present. [↑](#footnote-ref-12)
12. Ball and Busch argue that such comparison takes place in early vision before different features of the stimulus are integrated. [↑](#footnote-ref-13)
13. For other objections and responses to them, especially related to postdiction effects such as apparent motion and the flash-lag effect, see Arstila [2015, 2016](Arstila, 2015, 2016). [↑](#footnote-ref-14)