

Is there a 'Specious Present'?



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Volume 6

2013

Number 6

ISSN 1756-2074

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IS THERE A 'SPECIOUS PRESENT'?

According to the doctrine of the 'specious present' the content of conscious experience comprises a brief but extended interval of time, not just an instant. One standard argument for this view appeals to the fact that change always takes time. In this paper I suggest that this argument is a poor one; it conflates the properties of the stimulus with the properties of the experience. I then outline a simple way in which certain kinds of change could be experienced even if experience did not have a temporally extended content. I stop short of arguing directly against the specious present however; my aim here is more to challenge the argument than to challenge its conclusion.



Recently, philosophers of mind have been paying increasing attention to the question of how we perceive time and change. Much of the discussion concerning the perception of change has concerned various versions of the doctrine of the *specious present*. It is accepted by most participants in the debate that some version of the doctrine is correct, and the focus of discussion has been on which version is correct. In this paper, I shall outline the doctrine and describe one of the more common arguments given in its favour. I shall then suggest that, despite being commonly accepted, the argument is a poor one. Moreover, there is a *prima facie* plausible alternative that seems to fit better with the account of change perception given by cognitive science, at least for certain kinds of change. I shall not go so far as to claim that there is no specious present; but, if there is a specious present, then it must be argued for by other means than the argument that I discuss here.

Perceiving Change

The doctrine of the specious present, at least as currently discussed in anglophone philosophy, says that the content of conscious perceptual experience consists in an extended period of time, rather than an instant. It is often invoked in order to explain how it is possible to experience change. As C. D. Broad pointed out long ago, we sometimes experience change directly rather than merely inferring it from the disparity between current perception and memory:

[...] we do not merely notice that something *has* moved or otherwise changed; we also often see something *moving* or *changing*. This happens if we look at the second-hand of a watch or look at a flickering flame. [...] It is also clear that to see a second-hand *moving* is a quite different thing from 'seeing' that an hour-hand *has* moved. In the one case we are concerned with something that happens within a single sensible field; in the other we are concerned with a comparison between the contents of two different sensible fields (Broad, 1923, p. 351).

There is, as philosophers say, a *phenomenology* involved in the perception of change; some part of the subjective character of the experience is associated with, or perhaps constitutes one's awareness of, the change that is being perceived. So there is more to the subjective character of experience than could be explained just in terms of the perception of objects and their non-temporal properties at a single moment in time. The experienced motion of the sweep of the second hand of a watch, for example, is a part of 'what it is like' to have the experience of looking at the watch.

Now, experience obviously does not encompass what happens at *every* time; on the contrary, a natural first thought is that one perceives only what is happening *now*, in the instantaneous *present* moment. But this cannot be *quite* right because causal influence takes time to travel; so whatever one perceives has normally happened some tiny fraction of a second prior to one's experience of it. Moreover, information from further away typically takes longer to arrive; when one looks at the night sky, for example, one sees the stars as they were many years ago because the light they produce takes many years to arrive. So, in fact, the events that we perceive do not all belong to the same instant but occur at different times, sometimes spread over quite large intervals. Nevertheless it does not *seem* that way to us; the stars do not *look* as though they are many years in the past. Rather, everything appears to be present, and insofar as it is not really present then the experience involves a temporal illusion.

Most of what we perceive is sufficiently close to us, however, that these small time differences are negligible; they are below the threshold of our ability to detect non-simultaneity anyway. In any case it will do no harm, for our current purposes, to ignore them. But does it follow that, to all intents and purposes, distant objects aside, we experience only the present instant? If this were so, it is claimed, there would be a puzzle as to how it is possible to perceive change. For change essentially takes time to occur. Consequently, if experience encompasses only a single instant then it encompasses only an instantaneous time-slice of reality that cannot reveal the existence of change. This, I believe, is at least a part of what lies behind a much-quoted passage from William James (James was not the first to say something of this kind, as he acknowledged):

A succession of feelings, in and of itself, is not a feeling of succession. And since, to our successive feelings, a feeling of their succession is added, that must be treated as an additional fact requiring its own special elucidation (James, 1890, pp. 628–9).

If we imagine experience as decomposable, at least notionally, into instantaneous time-slices, each of which consists in a kind of 'snapshot' of an instantaneous state of the world, then at any given instant one would be having an experience in which no change could be detected. The fact that one would have a succession of such states would not, in itself, explain how change was perceived; for it is unclear how the phenomenology of change could consist in a mere succession of independent experiences, each of whose phenomenology did not involve change. This is particularly clear if we can imagine someone with no capacity to retain information from one moment to the next. Insofar as such a person could have experiences at all there would be no experiences of change, for except in certain very unusual cases change cannot be detected unless the state of the world at one time can be compared with the state of the world at another time.¹

Here is one further way to see the problem. Suppose there were an object, *O*, that changed colour from red to green. Suppose that the change took place instantaneously, such that at all times up to and including time *t* the object was red, and at all times after *t* the object was green. Perhaps nothing that can be perceived in the real world changes instantaneously; but the example will nonetheless serve to make a point that might be thought to apply to change of any kind. Suppose that experience accurately presented the colour of the object at any given time, and for brevity let us neglect the time lag caused by light taking time to travel from the object. Then if experience were only of the present instant, at all times up to and including *t*, the subject would experience *O* as red, and at all times after *t* the subject would experience *O* as green. At no time would *O* be *changing* from red to green, so at no time would *O* be experienced as changing from red to green. So the change would not be experienced. Yet, arguably, an instantaneous change of colour could be experienced (though it is less clear whether the change would be experienced as instantaneous).

Many philosophers have responded to this problem by supposing that the content of experience encompasses more than an instant of time; it consists of a *specious present* (present, because all experience seems in some sense 'present'; yet specious because the real present time is not extended):

[...] the practically cognized present is no knife-edge, but a saddle-back, with a certain breadth of its own on which we sit perched, and from which we look in two directions into time. The unit of composition of our perception of time is a duration, with a bow and a stern, as it were – a rearward- and a forward-looking end. It is only as parts of this duration-block that the relation of succession of one end to the other is perceived. We do not first feel one end and then feel the other after it, and from the perception of the succession infer an interval of time between, but we seem to feel the interval of time as a whole, with its two ends embedded in it (James, 1890, p. 609).

James's own version of the doctrine of the specious present is slightly unusual in that he emphasises the idea that the content of experience may extend into the future as well as the past. Moreover, James considered the specious present to encompass a duration of many seconds. This might make one wonder whether James really had in mind the nature of our immediate experience of change, or whether he was in fact proposing a kind of 'psychological present' not exclusively related to immediate experience; some kind of short-term memory, perhaps. In any case, most contemporary philosophers who explain the experience of change in terms of the specious present assume the duration of the specious present to be short, probably of the order of a few hundreds of milliseconds.

An Argument for the Specious Present?

Many writers seem to have assumed that no further argument for the specious present is required. Those who give an explicit argument often argue in a way exemplified by the following passage by Rick Grush:

Motion can only manifest over a temporal interval of non-punctate magnitude, so if we can *perceive* motion, then the temporal content of an experience cannot be limited to a temporally punctate instant (Grush, 2007, p. 1).

Arguments like this are not as strong as they may at first appear, however, and in what follows I shall show that in fact this kind of argument fails to demonstrate that experience has a temporally-extended content.

The argument takes as a premise that motion (or, more generally, change) can only be detected when it occurs over a non-zero interval of time. It then moves somewhat directly to the conclusion that the content of an experience of motion (change) must be temporally extended. Presumably the thought behind the first step is either that motion cannot be instantaneous, or at any rate that instantaneous motion could not be detected. Let us consider this more carefully. Can motion be a property that attaches just to an instantaneous time-slice of an object? Probably the most common view is that an instantaneous time-slice of an object is only moving insofar as there are adjacent time-slices of the same object located at different positions in space. Thus an individual time-slice does not possess motion properties intrinsically; it only has such properties by virtue of its relation to other time-slices.

Consider a related question: could there be a moving object that existed only for an instant? If an object is only moving if it is in different places at different times then an object that only exists at one time cannot be moving. But against this it might be argued that an object can be moving if there are counterfactual truths of the following form: had the object persisted, it

would have been located at a different place at an earlier or later time. Moreover, there might be circumstances in which physical laws entailing that momentum is conserved would have the consequence that the instantaneous object had momentum, and should thus be thought of as moving.

These are very controversial issues in metaphysics. Fortunately, for present purposes we do not need to commit to one view or the other regarding the metaphysics of motion. For the question about the specious present is a question about the experience of motion (more generally, change), not a question about the metaphysics of motion (change), and we should be careful to keep these questions separate. Still, in practice, given the nature of the objects we perceive and the sensory apparatus with which we perceive them, we can only perceive motion in an object that is at different places at different times. That is to say, the *stimulus* – the world's impact on one's senses – must be temporally extended in order for motion, or any other kind of change, to be perceived. This I accept. But it certainly does not follow from this that the *content* of experience is temporally extended. There is no obvious reason to think that a temporally-extended stimulus could only cause an experience with a temporally-extended content. There is certainly no logical entailment from the former to the latter.

But how could there be an experience of change without the content being temporally extended? If the content were not temporally extended, would that not mean that all we could experience would be instantaneous time-slices of objects which, because instantaneous, would not 'manifest' change? If this question seems pressing then you may be thinking of the nature of conscious experience in the wrong way. Perhaps you are implicitly imagining that experiencing a changing object consists in encountering some kind of mental object, which, like a real object, cannot manifest change without being in different states at different times. But conscious experience is not like this; it does not consist in inspecting some kind of inner mental realm whose metaphysical laws mimic those of the external world.

Here, in my view, is a better way to think of conscious perceptual experience. To have an experience is to be in a certain kind of state that has a *representational content*. The notion of representational content can be thought of in terms of the *correctness conditions* of the experience. An experience is correct – or, as philosophers say, *veridical* – if, and only if, the world is the way the experience presents it as being. Suppose that you see the sun shining. Then your experience has *the sun is shining* as part of its representational content. An experience of that kind is veridical if, and only if, the sun is shining. Perhaps you could have that kind of experience even if the sun were not shining, in which case you would be suffering some kind of illusion or hallucination. But it would still seem to you that the sun were shining, and *the sun is shining* would still be (a part of) the representational content of the experience.

Now, suppose an object, *O*, is perceived as moving. There is no obvious reason why the representational content of the experience at a given time could not include the content *that O is moving*. Although movement can only be *detected* by the brain over time, there is no reason why it cannot be *represented* as occurring *at a time*. We usually experience objects as moving at specific speeds and in specific directions, so the content will be more specific than just that *O is moving*. In the physical sciences it is normal to represent velocity (speed in a particular direction) as a *vector* – a set of components giving the speed relative to each of three axes, thus giving the overall direction and rate of motion. Suppose *O* is moving with velocity *v*. Then the experience could have as part of its representational content that *O is moving with velocity v*. Perhaps further complications to the content would have to be added to capture fully the experienced nature of the motion. For example, if the object is moving along a curved path, some vector measure of the curvature of the path might also be represented.

Other kinds of experienced change could also be represented by vector properties possessed at a single time. For example, if an object is changing colour this might be represented by a vector that captures the rate and direction of the change through some range of colour properties (though see below for a complication). Similarly, when a sound is heard as changing pitch this might be represented by a vector that captures the rate and direction in which the pitch is changing. Provided we are careful not to conflate the properties of the stimulus (which, I have conceded, must be temporally extended) with the properties of the content, the fact that change is experienced does not entail that experience has a temporally-extended content.

Support from Empirical Studies

So far, I have described only a logical possibility. That is, I have argued that there is no contradiction in supposing that the experience of change comes about because experience represents that the world is changing in such-and-such a way at a time, which does not require a temporally-extended content. The mere possibility, whether actual or not, illustrates the failure of the argument for the specious present based on the perception of change. Still, this does not yet show that human beings actually do experience change in the way that I have described. I shall now suggest, however, that current views in cognitive science regarding motion perception and other kinds of change detection seem to fit well with such an account, at least if we limit our attention to continuous changes (I discuss discontinuous changes below). This will also help make it intuitively clearer how it might be possible to experience change without a specious present.

First, then, consider a well-known case of illusory motion known as *motion aftereffect*. This is experienced in a well-known illusion called the *Waterfall Illusion*. If you look at the water falling from a waterfall for a minute or so, keeping your eyes trained upon a fixed point such as a rock, and then look away toward a stationary scene, you will experience an odd sensation: the stationary scene appears to be moving in the opposite direction to the motion of the waterfall. Yet at every moment the position of the objects in the stationary scene appears unchanged. Consequently you experience change (motion); but there is no change in what you experience (that is to say, the content of the experience does not change). A common explanation for the illusion is that there are two systems at work in human visual processing: one system that detects the position of an object and another that detects its motion. Normally the computations made by these systems harmonise, so that the experienced change in the position of an object matches its experienced motion. But in certain cases, such as the Waterfall Illusion, the two systems produce conflicting outputs.

That, at any rate, is the standard story about the Waterfall Illusion. There are many other phenomena known to cognitive scientists that illustrate the same kind of phenomenon; cases in which there is an experience of change, and yet no change in what is experienced.² In all such cases the output of the motion detection system could be represented as an instantaneous vector, and therefore need not be part of a temporally-extended content. This shows that although James and others may have been right that a succession of experiences is not, in and of itself, an experience of succession, change can be experienced without the experience itself changing. If this is so, then there seems to be no need for a temporally-extended content. An object, or scene, can simply be represented in experience as changing in a certain way at a particular moment in time. Now, a quick look through any standard textbook on vision science reveals that motion perception is an extremely complex matter, probably involving many interacting subsystems. So the notion that there is an independent motion-detection system may well be an oversimplification. But what matters is that the very possibility that motion could be perceived

in the way described above shows that it is at least possible, in principle, that the perception of motion and other kinds of change could be explained without recourse to a specious present.

Note that cognitive scientists typically give a similar account of the perception of many kinds of change that can be represented in terms of local derivatives, such as changing colours, shapes, sizes, auditory tones, etc. Indeed the word 'motion' is sometimes used to refer to all of these (see Rensink, 2002, pp. 248–9). So there is *prima facie* reason to think the same kind of account could be given for many other kinds of experienced changes (always keeping in mind that, as explained above, we are only discussing those cases in which there is a phenomenology associated with the change itself, as opposed to cases in which change is inferred.)

Discontinuous Changes

Many changes can be represented in terms of local derivatives; finite rates of change at specific times and places. But, at least in principle, not all changes are like this. Consider again the case described above, in which object *O* is red at all times up to and including time *t* and is green at all times later than *t*. There is no time at which *O* is changing colour; and any given time it is either red or green. So it is not clear how the above proposal could accommodate experiences of instantaneous changes.

There is a further, related problem. In order to represent a change using a vector there must be a continuous route from the starting point of the change to the end point. When an object moves from A to B it moves through a continuous series of spatial locations starting at A and ending at B; at each such point its motion can be represented as a vector. But for some changes, other than motion, there may be no plausible continuous route between the starting point and the end point. Consider the change from red to green, for example. There is no continuous series of colour hues (though colour 'space') between red and green except via another, quite different, colour. There could, for example, be a continuous change from red to yellow via a series of shades of orange, and a similar route from yellow to green; but no continuous route from red to green except via yellow (or alternatively via blue, black, white, etc.). But it is not plausible that we experience rapid red-green changes as passing through an intermediate yellow (or blue etc.) stage. Consequently, for a change from red to green, it is unclear what the relevant vector could be.

I have two proposals concerning how the opponent of the specious present might address these problems; one proposal to address the first problem, concerning instantaneous changes, and one to address the second problem, regarding discontinuous changes. I stress that these are only speculations and might be shown to be false by empirical research; but my aim in putting them forward is only to show that at this stage in the argument there are still possible solutions, and the question of whether there is a specious present has not yet been settled.

With regard to the first problem, it is not clear that anything is ever really experienced as changing instantaneously. Consider the well-known phenomenon of illusory motion induced by static images that are separated in both space and time. This is the phenomenon familiar from movies and television, in which a series of static dots at different positions on the screen is experienced as a single moving object. Now, suppose that a pair of static dots were displayed at different locations, one after the other, with zero temporal interval between them. Thus a dot is at location L_1 at all times up to and including *t*, then a dot is at a different location, L_2 , at all times thereafter. Although a zero temporal separation is not optimal for experiencing illusory motion, nevertheless illusory motion is sometimes experienced in such cases.³ In those cases in

which illusory motion is experienced, how quickly does the object appear to move? In order to be at L_1 at all times up to and including t , and at L_2 at all times thereafter, the object would have to move instantaneously. But it does not seem as though the object moves instantaneously.⁴ Rather, the object seems to move very quickly, though it is hard to say just how quickly; and it seems to move along a route between the locations of the two static images. Perhaps the content of the illusory experience is somewhat indeterminate, or perhaps it is determinate but not easy to introspect. Either way, the phenomenology of the experienced change seems to represent the object moving at high speed, but not instantaneously. Given that the human senses have limits – there is presumably a threshold of discrimination such that we cannot detect the difference between an object moving very fast and an object moving instantaneously – this is presumably just what we should expect. So perhaps motion is never experienced as instantaneous, and there is no need for a separate explanation.

Much the same line of thought might be applied to certain other kinds of perceived change. Perhaps no object ever appears to change colour instantaneously. But for some changes we do run into the problem mentioned above, that there is no continuous direct route through colour space from red to green. One possible suggestion – though I am not certain that I find it promising – is that two kinds of change are experienced simultaneously. The red colour is experienced as fading away, rapidly but not instantaneously, while simultaneously the green colour fades up, again quickly but not instantaneously. The problem with this suggestion is that it must somehow be explained how the object is experienced during the change. It seems that it would have to be experienced as to some extent red and also to some extent green, but without being experienced as having a single reddish-green hue.⁵ Perhaps there is a way for this to happen; probably only empirical research could settle the issue. In any case, I would like to suggest an alternative approach.

This brings me to my second proposal. First, note that although it seems hard to deny that there is a phenomenology associated with the experience of motion, as illustrated by Broad's example of the watch-hands, this is perhaps less clear with instantaneous changes. One is certainly aware, afterwards, that something *has changed*; but I think it less clear that there is a 'change' phenomenology in the same sense as there is with motion and other continuous 'vector' changes. So perhaps it is not surprising that we must give a different account of what it is to experience such changes.

Cognitive scientists believe that the early visual system (or early processing in other sensory modalities) detects 'transients' that occur when there is a sudden change in sensory stimulation associated with a specific location. When a transient occurs at a location to which one is not attending, one's attention is drawn to that location.⁶ There is thought to be a kind of very short-term visual memory (lasting around 300ms) that is discarded unless one attends to the relevant location. But when one's attention is directed to a specific location by a visual transient one may then become aware of the difference between the current state at that location and the state retained in the short-term memory, and thus aware of the change. (The phenomenon of 'change blindness,' in which one does not notice a potentially visible change taking place, is thought to occur just when transients either do not occur because the change is very slow, or too many of them occur because of distracting factors, preventing attention from being directed to the location of the change and resulting in the relevant information being discarded from the short-term visual memory.) So perhaps insofar as a discontinuous change has a distinctive 'change' phenomenology, this derives just from the transient (which perhaps might be thought of as an experience with the content 'something has just changed here'). In such cases there may be no phenomenology specific to the *type* of change, which is discovered by comparison with short-term memory rather than through immediate experience

Conclusions

This discussion of the doctrine of the specious present has only scratched the surface of a very complex issue. I would like to stress that I have offered no arguments *against* the doctrine. Moreover, there are other arguments for the doctrine that have not been discussed here.⁷ Still, the doctrine of the specious present remains puzzling in many ways.⁸ The possibility of rejecting it altogether should therefore be given careful scrutiny. What I hope to have shown here is that one of the most common arguments for the specious present fails to establish its conclusion; and more broadly that arguments for the doctrine of the specious present, as opposed to arguments for one specific version rather than another, require closer scrutiny than they have had.⁹



Notes

¹ The sort of ‘unusual cases’ that I have in mind would be those in which an instantaneous condition is contingently associated with a change. For example, one can detect that one’s car is moving by looking at the instantaneous state of the speedometer. But it is not plausible that change perception always relies on such associations.

² See for example the ‘fine grain motion illusion’ (Exner, 1875; Thorson, Lange and Biederman-Thorson, 1969), in which motion is perceived despite taking place between points too close together for the difference to be resolved. See also Morgan and Cleary (1992) for a case in which experienced motion takes place between two images, one of which is too faint for its pattern to be perceived. For a striking case discovered more recently, see the ‘Silencing Illusion’ described by Suchow and Alvarez (2011), in which size, shape, hue or luminance can be experienced as changing, and there is good reason to think that the experienced property is changing in the experience, but the rate at which the experience changes is different from the experienced rate of change (see also Watzl (2013) on the problems posed by this illusion for certain versions of the specious present).

³ The experience of apparent motion is a complex function of the various timings and the angular separation between the dots. See for example Gepshtein and Kubovy, 2007. Although a zero interstimulus interval is never optimal, apparent motion is sometimes seen if the angular separation of the dots is small. When it is not seen then of course there is no motion experience to be explained.

⁴ At any rate, that is how I would report my own experience in an informal experiment. I have not seen this specific question addressed within the cognitive science literature, however.

⁵ It is not normally possible to experience an object as having a hue that mixes red with green, or yellow with blue, though it is worth noting that Crane and Piantanida (1983) do describe an experiment in which arguably such an experience can be induced under certain conditions.

⁶ See for example Rensink, 2002; Turatto and Bridgeman, 2005.

⁷ For one strand of argument in favour of an ‘extensional’ theory that counts as a specious present theory for present purposes see Soteriou, 2010; Phillips, 2010, 2011; Rashbrook, 2013.

⁸ See Dainton (2001, chapter 7) for problems facing certain early versions of the specious present.

⁹ The issues discussed in this paper will be given a much more detailed treatment in my forthcoming monograph on the experience of time and change

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Insights

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