

Shepherd's Claim that Sensations Are too Fleeting to Stand in Causal Relations with Other
Sensations

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ABSTRACT

Shepherd argues that we can know that there exists a universe external to the mind because that universe is the only possible cause of our sensations. As a part of that argument, Shepherd eliminates the possibility that sensations might be caused by other sensations on the grounds that sensations are merely momentary existences and so not capable of standing in causal relations with each other. And yet she claims that sensations *do* stand in causal relations to other objects, both as the effects of the combination of the external world, our organs of sense, and our minds, and as the partial causes of other sensations. These claims together generate a puzzle. If sensations are too fleeting to stand in causal relations with *each other*, how are they nonetheless capable of standing in causal relations to other objects? I suggest that because sensations exist only for a moment, to stand in *synchronous* causal relations with other sensations would require that the two sensations exist at precisely the same moment. But since cause and effect are *identical* during the moment in which they are combined, any two sensations that exist for only the moment of their combination are identical. Nothing can be its own cause, so sensations cannot be the sole cause of other sensations. Sensations can be the partial cause or effect of other objects, though, so long as those objects endure for more than a single moment. For example, external objects, organs of sense, and the mind, all exist both before and after the moments in which they combine to form a sensation. So, while their *combination* is identical to that sensation in that moment, all of these other objects exist outside of that moment, and that combination as well.

KEYWORDS

Shepherd, Sensation, Identity, Causation

In her *Essays on the Perception of External Universe*, Shepherd argues that we can know that there exists a universe external to the mind because that universe is the only possible cause of our sensations. As a part of that argument, Shepherd eliminates the possibility that sensations might be caused by other sensations on the grounds that sensations are merely momentary existences and so not capable of standing in causal relations with each other. And yet she claims that sensations *do* stand in causal relations to other objects, both as the effects of the combination of the external world, our organs of sense, and our minds, and as the partial causes of other sensations. These claims together generate a puzzle. If sensations are too fleeting to stand in causal relations with *each other*, how are they nonetheless capable of standing in causal relations to other objects? Furthermore,

it would seem that this puzzle generalizes to non-mental objects as well. It seems that Shepherd holds that if an object exists only for a moment, then it cannot causally interact with any other object that also exists only for a moment, even though both momentary objects can and must causally interact with temporally enduring objects. What is it, then, about momentary objects that prevents them from interacting causally with other momentary objects, but not enduring ones?

I suggest that the solution to this puzzle depends on the details of Shepherd's account of causation, specifically on her claims that causes are both synchronous with, and identical to, their effects. Because sensations exist only for a moment, to stand in *synchronous* causal relations with other sensations would require that the two sensations exist at precisely the same moment. But since cause and effect are *identical* during the moment in which they are combined, any two sensations that exist for only the moment of their combination are identical. Nothing can be its own cause, so sensations cannot be the sole cause of other sensations. Sensations can be the partial cause or effect of other objects, though, so long as those objects endure for more than a single moment. For example, external objects, organs of sense, and the mind, all exist both before and after the moments in which they combine to form a sensation. So, while their *combination* is identical to that sensation in that moment, all of these other objects exist outside of that moment, and that combination as well.

Similarly, a momentary flash of light cannot be the cause of another momentary flash of light, even though both can and must interact causally with enduring objects. If the flashes of light existed successively, they could not interact causally because causation requires synchronous existence. If they exist, and combine, in the same single moment, though, then there is no difference between them. All that would exist in that moment would be the "combination" of the two flashes, and so not also the two separate ones. Such flashes could, however, cause and be caused by enduring objects because such objects exist at more times than their moment of combination with the flashes, and so have identity conditions that differentiate them from those flashes.

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My procedure here will be as follows. I begin by presenting Shepherd's account of causation, with particular attention to her claims that the causal relation is a relation in which two objects combine to create a third object, that as such causes and effects must exist synchronously with each other, and that in this moment of combination, the combination of the causes is identical to the effect produced. Next, I reconstruct Shepherd's arguments for the conclusions that our sensations are caused by a world of objects that are external to the mind, and that continue to exist when unperceived. Finally, I draw out the puzzle that those arguments pose, and offer my solution to it.

Shepherd's Account of Causation

To begin, here is Shepherd's definition of 'cause'.

A Cause, therefore, is such an action of an object, as shall enable it, in conjunction with another, to form a new nature, capable of exhibiting qualities varying from those of either the objects unconjoined. This is really to be a producer of new being.—This is a generation, or *creation*, of qualities (*ERCE* 63)

While Shepherd does write here that cause is an "action" of an object, not the object itself, the action to which she is referring is the combination of the object with another to create a third. Shepherd writes in this way to emphasize that these objects themselves are causes, but only insofar as, and in the moment that, they enter into a causal relation. That will be crucial to understanding Shepherd's argument for the synchronicity of cause and effect in a moment. Equally important is the nature of the causal relation itself, which is that it is one wherein two objects combine to create a third. That third is the effect, and here is Shepherd's definition of 'effect'.

An Effect is the produced quality exhibited to the senses, as the essential property of natures [causes] so conjoined. (*ERCE* 63)

Just as causes are defined as those objects that combine to create a new object, effects are complementarily defined as those objects that are the result of that combination. Important to note

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is that for Shepherd an object necessarily has all and only the qualities that it does. So, the creation of a new quality “in an object” amounts to the creation of a new object entirely. This is why the generation of an effect is “a produced quality” and to be a cause is “really to be a producer of a new being”. Any change produced in an object by the action of another object is the production of a new object entirely.

Shepherd derives from these definitions her thesis that causes are simultaneous with their effects with an argument aimed directly at Hume’s thesis that causes precede their effects.

“*Antecedency and subsequency,*” are therefore immaterial to the proper definition of Cause and Effect;” on the contrary, although an object, in order to act as a Cause, must be in Being antecedently to such action; yet when it *acts as a Cause*; its *Effects* are *synchronous with that action*, and are *included in it*; which a close inspection into the nature of cause will prove. (ERCE 49-50)

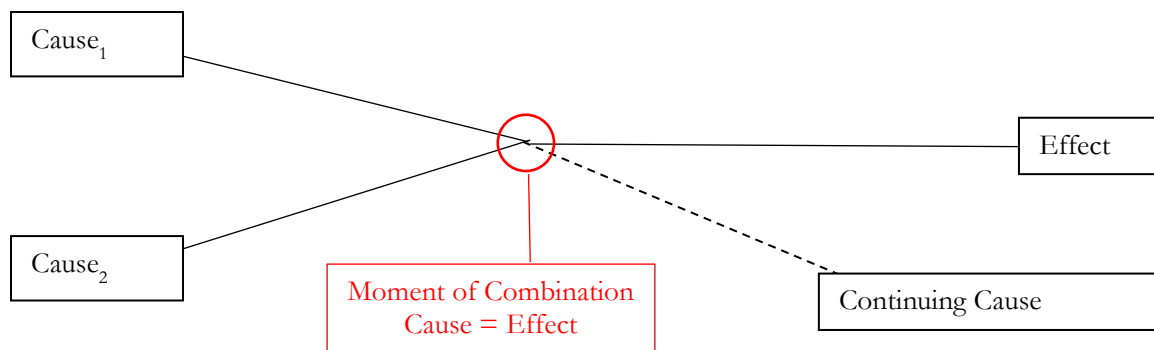
What precedes this announcement is Shepherd’s presentation of her account of causation as the production of a new object via the combination of precedent objects, so the ‘therefore’ here indicates that she takes her thesis regarding the synchronicity of cause and effect to follow from that account. That is confirmed by the promissory note that closes this sentence: that her thesis will be proved through a close inspection of the nature of cause as she understands it. Thus, we next find Shepherd offering just such a proof by drawing on her own definitions of cause and effect.

For effects are no more than the new qualities, of newly formed objects. Each conjunction of bodies, (now separately in existence, and of certain defined qualities,) produces upon their union those new natures, whose qualities must necessarily *be in, and with them, in the very moment of their formation*.

Thus *the union of two distinct natures*, is the *cause, producer or creator* of another; which must instantly, and immediately, have all its peculiar qualities; but the cause has not acted, is not

completed, till the *union* has taken place, and the new nature is formed with all its qualities, *in*, and *about*, it. (ERCE 50)

Shepherd's argument here appears to be something like the following. Causes and effects are both objects. What makes some objects causes and others effects is that the former combine to create the latter. While the objects that will serve as causes certainly exist prior to the objects that are their effects, they only exist *as causes* insofar as, and *in the very moment* that, they combine to produce some effect. This is what she means when she writes that, 'the cause has not acted, is not completed, till the union has taken place, and the new nature is formed with all its qualities.' Complementarily, the objects that are effects exist consequent to their causes, but are *effects* insofar as, and 'in the very moment' that, they are formed from their causes. Thus, the objects that are causes exist *as causes* and the objects that are effects exist *as effects* only in a single instant: the instant in which the combination of objects that is the causal relation occurs, and in which the objects that are causes *become* the objects that are their effects. We can illustrate this in a relatively simple picture.



Objects necessarily have the qualities that they do. The spark, for example, has among its qualities its heat, its color, its power to combine with a twig to cause a fire, and its motion. The sense in which the spark and twig are synchronous with the fire that they combine to cause is that there is a single moment in which the spark's and twig's qualities exist synchronously with the qualities of the fire. As Shepherd points out, the spark and twig also have these qualities *antecedent* to their combination, as the fire also has its qualities *consequent* to that combination, but what is essential to the causal

relation is that all three objects have their qualities at once, for at least the moment in which the causal combination occurs. The spark has its heat before it combines with the twig, and in the very moment that it does. One way to put this is that the spark's qualities *overlap* temporally with those of the fire, for at least a single moment. So, while the spark's heat exists prior to the moment of combination, it *also* exists in that moment. It is this temporal overlap of qualities in the single instant of combination that makes cause and effect synchronous because this is the very same moment in which these objects act as causes and effects.

In fact, Shepherd holds the stronger view that since the relation of cause and effect just *is* the combination of precedent objects to form new ones, cause and effect are not only synchronous, but really just different names for this self-identical combination.

The objects (whose *union is necessary* to a given result,) must certainly exist, *antecedent* to such an union. But it is *in their union*, there exists those *newly formed objects*, or masses of qualities called *Effects*, which are therefore *identical* with the *similar cause*; for in *this union*, Cause and Effect are *synchronous*, and they are but different words for the same *Essence*. (ERCE 57)

Since the relation of cause and effect just is *the combination* of objects, even calling this a *relation between* cause and effect is misleading.¹ The objects that are causes exist antecedently to the objects that are effects, but in some sense at least, the causal relation is not a relation between these objects, but is the transformation of the former into the latter in a vanishingly short instant. It is the spark and twig

¹ Jennifer McRobert notes that for Shepherd our taking cause and effect to be distinct from each other, and our taking cause to be antecedent to their effects, 'is merely a by-product of our abstract analysis of the causal relation in the representational object,' (McRobert 59), and rightly notes that this thesis is defended more thoroughly in Shepherd's later *EPEU* than it is in *ERCE*, although it is clearly at work in both texts.

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that combine in this moment to become fire, and so all three must exist synchronously, if only momentarily.

Fire and Wood must be antecedent to combustion, no doubt; but in the *union of Fire and Wood*, there exists immediately *combustion* as a new event in nature;—also in this union exists the similar *cause* allowed by the *data*, whilst combustion is also termed the *Effect* of the union of Fire and Wood; but, however termed, an *effect* is in fact a new but similar object as heretofore. (*ERCE* 57)

Here Shepherd emphasizes that while it might *appear* that combustion is an “event” that is subsequent to the “event” that is the union of spark and twig, that is merely a misleading feature of the *language* that we use to talk about causal relations.² In fact, whatever words we use to describe it, the effect in this relation is the *object*, fire. Importantly, it is because Shepherd takes the relata of causal relations to be objects (insofar as causation is a relation at all), rather than events, that she takes cause (qua cause) and effect (qua effect) to be synchronous. It is because the qualities of the spark and twig *overlap* in the moment of combination with those of the fire, that these causes are synchronous with their effect.

Consider an alternative. Suppose one holds that it is the event of the spark’s making contact with the twig that is the cause of the event of the fire’s starting. Since the making contact clearly does precede the fire’s starting, the cause precedes its effect. By contrast, on Shepherd’s view, it is objects, the spark and the twig, that are causes of the fire, but *only insofar as* those preceding objects

² Throughout *ERCE* Shepherd emphasizes that when philosophers deliberately change the language we use to describe causal relations, this can amount to a kind of slight of hand, wherein they smuggle their conclusions into their premises unnoticed by their inattentive audiences. Most notably, she accuses Hume of doing just this in order to arrive at his conclusion that causes and effects are not necessarily connected. (*ERCE* 31-4)

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combine to form the fire. The relation of cause to effect is constituted by this combination, and what this combination does is *change* the objects that are the causes *into* the new object that is their effect. Thus, while the objects that are the causes precede the object that is their effect, the combination which makes these objects into causes and effects is shared between them: their qualities overlap in that moment of combination.

Shepherd's Account of External Existence

With that understanding of Shepherd on the causal relation and the synchronicity and identity of cause and effect established, we can now turn to the chapter of *EPEU* in which Shepherd's puzzling claim about sensations first appears. Before we do so, however, one terminological point. As Shepherd uses it, 'sensation' is her term for any mental, or "inward" object: "sensation [...] is a generic term, comprehending every consciousness whatever" (*EPEU* 6). In the texts that we are going to be examining, Shepherd does sometime use this generic term, 'sensation', but at other times she uses 'sensible quality', which indicates a species of sensations, the differentia of which is that it refers specifically to the contributions of the senses to our mental lives. Other species of sensations, for Shepherd, include perceptions, ideas, feelings, notions, etc. Shepherd cites as examples of sensible qualities, "blue or red, sweet or sour, hard or soft, beautiful or ugly, warm or cold, loud or low," (*EPEU* 135). While her argument concerning the external world, and its premise concerning the fleetingness of sensations, might apply to sensations in general—more on that later—her focus in these texts is really on sensible qualities.

With that noted, we can begin with Chapter II: On External Existence, the first section of which addresses the issue of, "*Knowledge of external existence, how gained, &c.*" (*EPEU* 39). Shepherd's explanation of our knowledge of external existence is that we come to this knowledge through a bit of causal reasoning.

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I answer as before, that by *reason* the mind judges that the *causes* of those sensations in particular, which come under the definition of external objects, must needs be *out* of, and distinct from the mind, or the *cause of sensation in general*; for the notion of *outward* existence does not suit the *definition* given to *inward existence*: *Inward existence* is the *capacity for sensation in general*; *outward* existence is the exciting cause for *some sensation in particular*. *EPEU* 40

While there is a lot going on in that passage, the important point for present purposes is that we know of the externality of external existence by, first, understanding that our sensations must be caused by something, then, noting that they cannot be caused by the mind (because it is the cause of sensation “in general”, not the cause of particular sensations), and finally concluding they must be caused by something distinct from, or “outside”, the mind, i.e. by whatsoever it is that is the non-mental cause of particular sensations. Later in this section, Shepherd fleshes out her account of what this non-mental existence is, although our knowledge of it remains fairly modest. Roughly, we can know that there is as much variety in the external causes of our sensations as there is variety in those sensations themselves.

As Shepherd reaches the end of her initial presentation of the above argument, she appends an important footnote to it, to which she makes subsequent reference later in *EPEU*. That footnote addresses what appears to be a lacuna in the argument. Shepherd’s argument appears to be a very brief argument from elimination: sensations must have a cause, their cause cannot be the mind itself, therefore it must be something other than the mind, something external. The possibility that this argument appears to overlook is the possibility of one sensation’s being the cause of another. Since sensations are not identical with the mind itself, but are also not “external” to the mind,³ if we

³ Fakso 2023 complicates this claim insofar as Fakso argues that Shepherd distinguishes between the mind and self. Sensations, as Fakso reads Shepherd inhere in the self, itself a combination of mind and body, not the mind. See also, Boyle 2020, Lolordo 2022, Landy forthcoming.

cannot rule out the possibility that sensations cause each other, as Hume holds they do,⁴ then we would not be able to reach Shepherd's conclusion that they are caused by something external. The footnote addresses precisely this issue.

All these [sensations] merely consist in being *successive effects*; successive consciousnesses, which are but *changes* resulting from prior and unconscious objects, uniting their qualities with those necessary for sensation, in order to their formation—for inasmuch as the *changes*, must be *changes* on that which *continues* to exist, (for any sensation passed into oblivion cannot be changed,) so *continuous* existence is known by *inference*, not by *sensation*; for every sensation passes away, and another is created—but none of these, in its turn, could “begin its own existence;” therefore they all are but changes upon the existences which are already in being—they are effects requiring causes. (*EPEU* 42-3)

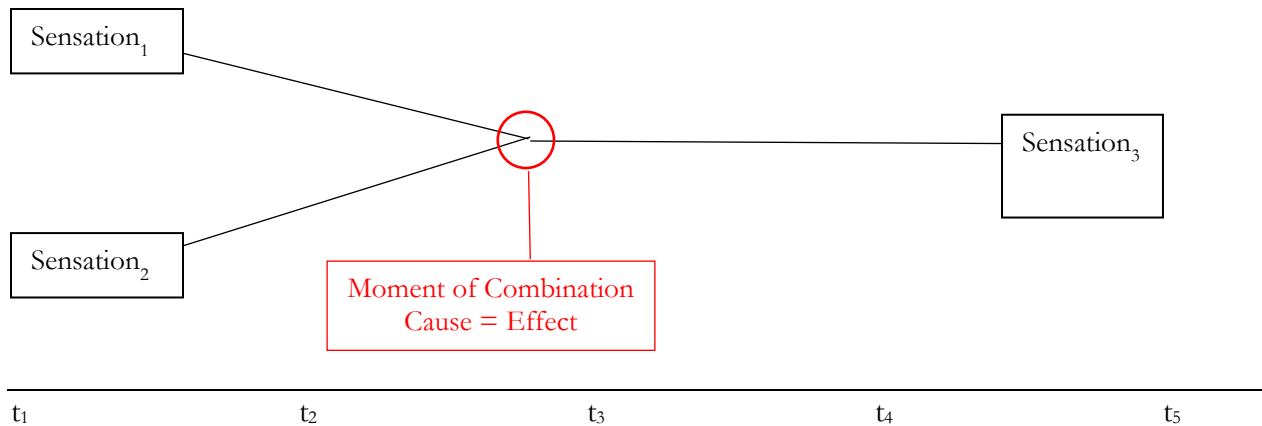
Again, since Shepherd takes herself to have proven at the outset of *ERCE* that no object can begin its existence uncaused, it follows that what she calls “inward objects”, sensations, cannot begin their existence uncaused.⁵ Therefore, sensations must be effects of some other object. Might they be effects of the combination of some *other* sensations, though, cut off from the external world altogether? Shepherd argues that they cannot. That argument proceeds from the claim that sensible qualities are themselves too *fleeting* to play this role. Notice Shepherd's contrast between that which *continues* to exist and sensations themselves, and also her claim that sensations “pass away, and another is created.” Those claims indicate that one sensation cannot be the direct cause of another

⁴ E.g. T 1.1.1.8-9; SBN 4-5.

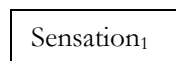
⁵ For critiques of Shepherd's argument for this foundational thesis of her system, see Paoletti 2011 and Fantl 2016. For a defense against these critiques, see Bolton 2019, Landy 2020, and Folescu 2022.

because each sensation exists only for a moment, and so do not endure long enough to participate in any causal relations with any other.

This claim, that sensations are merely momentary existences, goes hand in hand with another claim that Shepherd makes here, and elsewhere, that sensations are *successive* existences. That is, our sensations are momentary existences that occur one *after* the other, as opposed to all at once, or with any temporal *overlap*. That last part is important for two reasons. Firstly, if sensations did temporally overlap, then they could stand in causal relations with each other. One sensation might exist on its own from, say, t_1 to t_2 , then combine with another at t_3 , creating a third sensation which would go to exist on its own from t_4 to t_5 .



Secondly, it is precisely because sensations are merely momentary that they cannot temporally overlap, and so are incapable of combining with each other causally. That is, since sensations exist only for a moment, then such a temporal overlap is not possible. This first sensation would no longer exist by the time the second sensation would.⁶



⁶ We will consider the case in which both sensations exist and combine in a single moment soon.

Sensation₂

t₁

t₂

t₃

t₄

t₅

So, these two claims—that sensations are successive, not synchronous, and that sensations are merely momentary existences—go hand in hand.

That is important to keep in mind, as when Shepherd returns to this argument later in *EPEU*, her focus is on the successiveness of sensations, and so it is easy to lose sight of the fact that it is the momentariness of sensation that grounds this successiveness. Nonetheless, the argument as a whole is quite important, as it provides a useful diagnosis of where Hume’s reasoning about sensations, and their relation to external objects goes wrong.

This impossibility of sensible qualities, being the *productive principle* of sensible qualities, lies at the root of all Mr. Hume’s controversy concerning the manner of causation; for he, observing that such ideas could only *follow* one another, resolved causation into the observation of the customary *antecedency* and *subsequency* of sensible qualities. But objects, when spoken of and considered as causes, should always be considered as those masses of unknown qualities in nature, exterior to the organs of sense, whose determination of sensible qualities to the senses forms *one class of their effects* (*EPEU* 127)

Shepherd here agrees with Hume that if one considers the succession of our perceptions qua a series of distinct events occurring in time, then it would in fact appear not only that causes precede their effects, but also that there are no necessary connections between such events. That, however, is because perceptions are not necessarily connected to *each other*, but are rather new qualities of the experiencing subject that are individually necessarily connected to the unknown object that is their cause.

The necessary connection therefore of cause and effect, arises from the obligation, that like qualities should arise from the junction, separation, admixture, &c. of the like aggregates of

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successive aggregates of sensible qualities, arises from the necessity there is, that there should be invariable *sequences of effects*, when one *common cause* (or exterior object) mixes successively with different organs of sense, or various parts of the human frame, &c. (EPEU 131)

Since sensible qualities must have a cause other than some other sensible qualities, but since they are also distinct *internal* objects incapable of temporal overlap, Shepherd infers that their complementary causes are external objects and the mind.

A Puzzle about Fleeting Sensations

With that argument structure before us, we can now formulate the puzzle that is the primary focus of this paper. Shepherd appears to argue that sensations are too fleeting to stand in causal relations with each other. She is clear, though, that sensations do stand in causal relations to objects other than sensations. For example, as we have seen, Shepherd holds that sensations themselves, most specifically sensible qualities, are caused by the combination of objects external to the mind, the organs of sense, and the mind itself. Sensations are the effects produced by such combinations. Sensations can also be causes. For example, Shepherd defines perception as, “a “*consciousness of sensation,*” a SENSATION TAKEN NOTICE OF BY THE MIND”(EPEU 9), and defines an idea, as “a distinct class of sensations, being the result of that reasoning or observation which shows that under certain conditions, there must needs be an existence when we cannot perceive it”(EPEU 133-4). In both cases, a sensation, paradigmatically a sensible quality, appears in the mind, and then combines with the faculty of understanding or reason to produce a new sensation, either a perception of that sensation as being caused by something outside of us, or an idea that there must be some unperceived existence. In both cases, the original sensible quality is the partial cause, along with the understanding, of another sensation. So, while sensations cannot cause each other directly, they can combine with other mental faculties to produce novel sensations indirectly. So, sensations can be both causes and effects, just not of each other.

Why should that be? Why is it that sensations are too fleeting to stand in causal relations with each other, but not too fleeting to stand in causal relations with other objects? That is, if being fleeting implies that a sensation cannot be caused by, or cause, another sensation, why doesn't being fleeting also imply that sensations cannot stand in causal relations to other objects as well? Notice that because Shepherd's argument centers on the *fleetingness* of sensations, the puzzle that it generates is not specific to mental phenomena, but should generalize to all merely momentary existences. Suppose I see flash of blue light followed immediately by a flash of red light. And suppose I reason as follows. "That flash of blue light was so fast that it couldn't have possibly caused the flash of red light." Now suppose that also immediately following the blue flash, a tree near by lights on fire. There would be something strange, I suggest, in taking the blue flash to be the cause of the fire. Why? Because *prima facie*, if the blue flash occurs too quickly to cause the red flash, then without further explanation, we should suppose that it also occurs too quickly to cause the fire. Why should the quickness of the blue flash be prohibitive with respect to causing the red flash, but not with respect to causing the fire? Both the red flash and the fire are, presumably, objects with their own sets of qualities or causal powers, and both must be the effect of the combination of some antecedently existing objects. The only difference between them seems to be that the fire lasts longer than the red flash, but why should their respective durations *after* the moment in which they are created rule out the blue flash as the cause of one, but not the other? I believe that Shepherd has answers to these questions, but *prima facie*, we should be puzzled by this difference.⁷

⁷ A keen-minded reader might have noticed that I have described both the flash of red light and the fire in this example as occurring *immediately after* the flash of blue light, tracking Shepherd's discussion of successive sensations. Such a reader might object, however, that if any of these objects are to be the cause of any others, they must exist not successively, but synchronously. That is absolutely right, and I will turn to that point in a moment.

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I suggest the answer to these questions follow from a specific aspect of Shepherd's combinatory account of the causal relation. To see this, consider again, this important passage concerning the synchronicity of cause and effect.

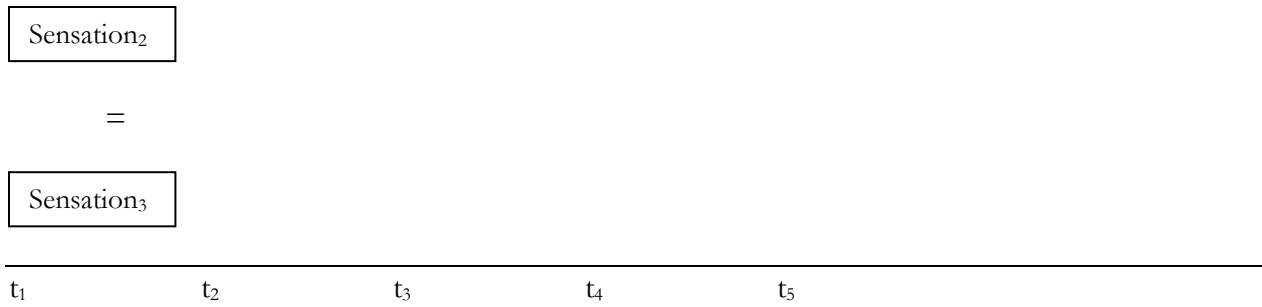
The objects (whose *union is necessary* to a given result,) must certainly exist, *antecedent* to such an union. But it is *in their union*, there exists those *newly formed objects*, or masses of qualities called *Effects*, which are therefore *identical* with the *similar cause*; for in *this union*, Cause and Effect are *synchronous*, and they are but different words for the same *Essence*. (ERCE 57)

The causal relation is one in which two objects, the causes, combine to create a third object, the effect. The effect is *identical* to the combination of the two causes. That is why Shepherd holds that cause and effect must be synchronous. There must be some single moment in which the causes are combined and at that moment become the effect. That combination of causes is identical to the production of the effect, and in that moment cause and effect are no longer distinct existences, they become one and the same thing.

With that in mind, consider what it would take for sensations, qua merely momentary existences, to cause one another. There would have to be a single moment in which two sensations combine to form a third sensation. If, however, each sensation exists for only a single moment, then this moment of combination would have to be the same moment that is the entire duration of each of the sensations involved.

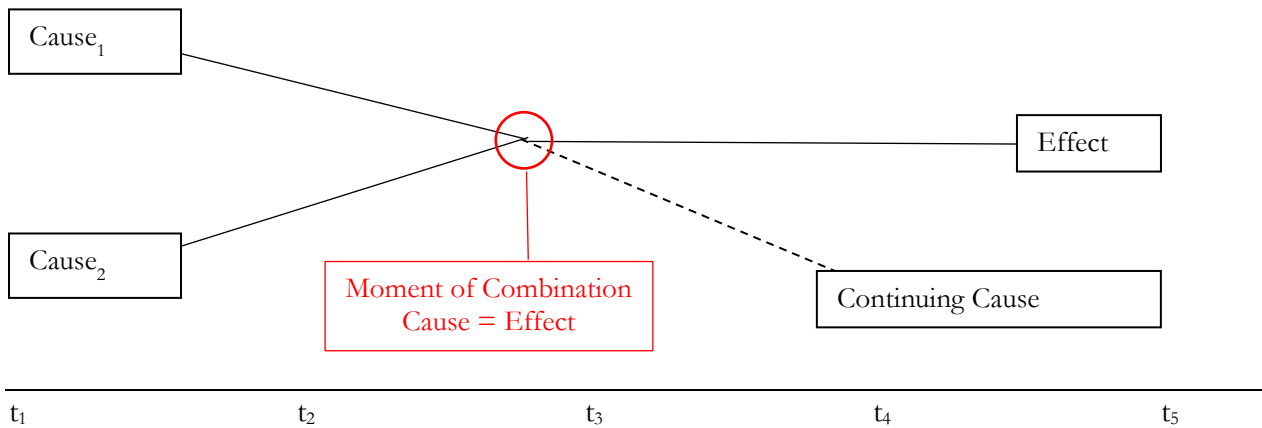
Sensation₁

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Recall, however, that in the moment in which causes combine to create an effect, the causes and effects are *identical*. That is relatively unproblematic when, as Shepherd mentions, the causes antedate this moment of combination and the effects postdate it because while the causes and effect are identical “in that moment” they also exist outside of that moment, and so are not identical *tout court*.⁸

We have illustrated this in a relatively simple picture.



The causes combine to *become* the effect, but the causes and effects each have their own existence before and after that moment of combination as well.

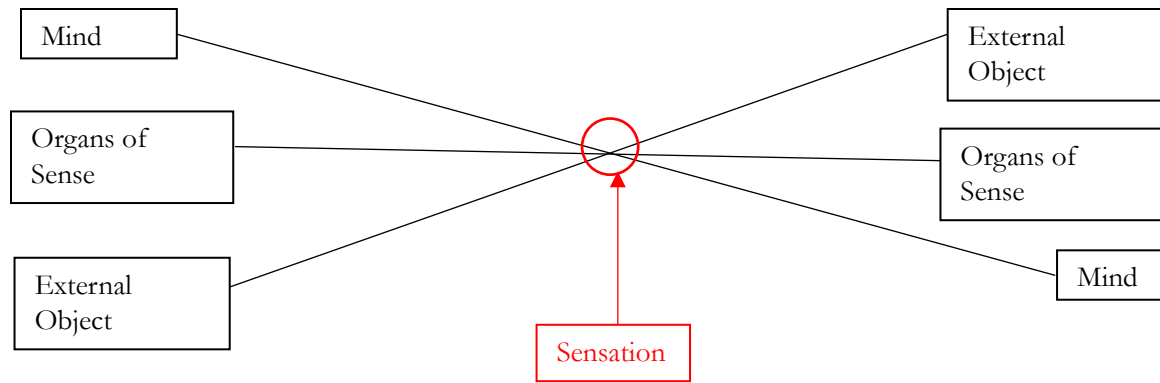
In the case of sensations, though, which are merely momentary existences, insofar as two sensations would combine to create a third sensation, all of those objects would exist in *only* that single moment. And in that single moment they would be *identical*. And because none of them would exist for any time other than in the moment, by contrast with the case of enduring objects, there is

⁸ See Landy 2024 for a treatment of this identity claim.

another way, two momentary sensations cannot combine to create a third momentary sensation because the two causes would have to exist *already* combined, so to speak, and so would not be two causes at all, but just already the single object that is the supposed effect.

To return to the example of the blue flash and the red flash, what Shepherd's account of causation implies is that the blue flash, if it exists for only a single moment, *cannot* be the cause of the red flash, if it also exists only for a moment. If the blue flash exists in the moment *prior* to the red flash, as in the example, then the two flashes do not exist synchronously, but successively, and so cannot be causally related. By contrast, if we change the example so that the blue flash exists synchronously and in combination with the red flash, then all that would ever exist, i.e. exist in that single moment, is the object that is the "combination" of the blue and red flash, say, a purple flash. There would be no moment in which the blue flash existed independently of the red flash, or vice versa. All that would exist would be a single purple flash. So, because each flash is a merely fleeting existence, they cannot enter into causal relations with each other, either over time, or in a single moment.

Notice that this account of the impossibility of some momentary existences causing other momentary existences does not imply the impossibility of such existences standing in causal relations more generally. Consider the case of an external object combining with the organs of sense and the mind to form a sensation. That would look something like this:



Here the external object, the mind, and the organs of sense all exist prior to the creation of the sensation (and after it as well). While their *combination* at t_3 is identical to the creation of the sensation, which itself exists only at t_3 , their individual existences are not identical to their combination at that moment. All three exist distinctly from each other both before their moment of combination and after. So, temporally-enduring objects can combine to cause a merely momentary existence, but also have their own existence outside of that moment of combination.

Similarly, sensations can themselves be causes when they combine with temporally-enduring objects. One example of that process is the process of reasoning, in which the faculty of reasoning combines with two or more sensations, “*drawing out to observation the relations of things as they are included in their juxtaposition to each other*”(EPEU 3).⁹ In the case of our reasoning to the conclusion that the external objects that are the causes of our sensations themselves continue to exist when we are not perceiving them, Shepherd describes this process as follows.

We gain the knowledge that there must needs be some *continuous (independent)* existences, beings that are *not* sensations, by the means of *reasoning*, which *reasoning itself* consists of other and *superinduced sensations*, arising from the comparison of the relations, of simple sensations

⁹ See Boyle 2023: 131-4 for an excellent explication of Shepherd on reasoning as a causal process.

among themselves, thus testifying the existence of the external objects it represents. (*EPEU* 10)

The faculty of reason compares the relations of simple sensations, and thereby produces a new “superinduced” sensation as its conclusion. Paradigmatically, this process takes the form of a train of reasoning proceeding through a syllogism. The faculty of reason is activated by considering a single premise, some sensation. That consideration is a combination of the faculty of reason with that sensation to create a new object, the faculty of reason set on a train of reasoning, or the faculty of reason with that premise in mind. Next, that newly empowered faculty of reason encounters the second premise, another sensation, and changes once again, this time into the faculty of reason having reached a conclusion. As Boyle points out, because each sensation is both an internal object of its own, but also representation in the logical space of reasons, reasoning for Shepherd is both a causal and a logical process.¹⁰ That is a tidy result. For current purposes, what is important here is the sensations involved, despite being merely momentary existences, can nonetheless act as causes, when combining with a temporally-enduring object, in this case the faculty of reason.

To return once again to our flashes and fire example, recall that we wondered why the fact that the fire continued to exist *after* being created implied that the blue flash might be its cause, when it couldn't be the cause of the momentarily existing red flash. To explain this, first we have to make one small change to the example. As we have noted, if the blue flash is to cause the fire, it must exist synchronously with it. So, suppose that the fire comes into existence in the same moment as the blue flash, and then continues to exist after the blue flash has disappeared. In this case, we would have to suppose that in the moment that the blue flash exists, it combines with some enduring object to create the fire. Since this other cause and the fire both exist outside of that moment, neither is strictly identical to the blue flash. So, the blue flash can unproblematically be one of the

¹⁰ Boyle 2023, 133.

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causes of the fire. Recall, however, that because the red flash is also a merely momentary existence, it must either be successive with the blue flash, or synchronously combined with it. If the former, the blue flash cannot be its cause because causes are synchronous, not successive. If the latter, then there is no blue flash or red flash, but only a purple flash. So, it is precisely the fact that the fire continues to exist *after* being caused by the blue flash that allows for the possibility of this causal relation. Similarly, it is precisely because our sensations combine with our enduring minds that they can act as causes of changes to it, but not the causes of other, fleeting sensations.

Thus is our puzzle solved. Sensations are merely momentary, and so are successive existences, which can never combine with each other to create new existences. Such existences, however, are themselves the momentary effects of other, temporally-enduring objects combining, just for that moment to create them. Paradigmatically, it is an external object that combines with the organs of sense and the mind to create sensible qualities. Sensations can also act as causes when they combine with temporally-enduring objects in a moment, to alter the existence of those objects, which for Shepherd counts as creating a new object, with new powers, altogether. The paradigm in that case is the faculty of reason being set onto a line of reasoning by its consideration of various sensations. In either case, it is only because sensations' interactions with temporally-enduring objects that they can stand in causal relations, which explains Shepherd's otherwise puzzling claim that sensations cannot cause other sensations.

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