

No Chance for the Change Argument – A Reply to Stout’s “The Category of Occurrent Continuants”

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Abstract. Processes are occurrents that were, are, or will be happening. Moreover, either they endure (i.e., they continue) or they perdure. Stout [11] contends that they endure. His argument – the Change Argument, hereafter – is grounded in the claims that processes may change and that something may change if and only if it endures. I shall argue that the Change Argument does not succeed. In particular, I shall show that, if the Change Argument aims at being neutral between endurantism and perdurantism, then it is invalid. If, instead, his argument rejects the constraint of neutrality in favor of the assumption of endurance theory for processes, then it is valid, but circular. In either case, Stout’s Change Argument fails to establish that processes endure.

Keywords. Processes, Change, Endurance Theory, Perdurant Theory.

1. Introduction

In his “The Category of Occurrent Continuants”, Stout provides a metaphysical argument for the thesis that processes, that are a kind of occurrent, are continuants (i.e., that they endure) [11]. The argument is based on the claims that there are true sentences that describe changes in processes and that something may change if and only if it endures. In this paper, I argue that Stout’s argument (the Change Argument, hereafter) for the thesis that processes are continuants doesn’t succeed: if the argument aims at being neutral between endurantism and perdurantism, then it is not valid. If, on the other hand, this argument rejects neutrality and presupposes from the very beginning that processes endure, then it is valid, but circular. In either case, the Change Argument fails to establish that processes endure.

This article is structured as follows. In Section 2, I provide some background. In Section 3, I present Stout’s Change Argument for the thesis that processes are continuants. In Section 4, I provide my argument to block the Change Argument. In

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Section 5, I consider an objection to my reply and I show that it fails. In Section 6, I summarize the main conclusions of this paper.²

2. Background: Persistence and Change

According to Stout, processes are things that are, were, or will be happening. Examples include my writing this article – something that is happening right now – or the concert that was happening yesterday. Processes are described or referred to in answering the progressive question: “What is (was, will be) happening?” The basic feature of expressions describing or referring to processes is the use of the progressive aspect.

Stout contrasts processes with events. Events are things that happened or will happen. Examples include the explosion that will take place next year, and my winning the race that happened yesterday. Moreover, the basic feature of expressions describing or referring to events is the use of non-progressive aspect.³

Stout intends to show that the aforementioned linguistic distinction between expressions standing for events and those standing for processes corresponds to a substantive metaphysical distinction between events and processes themselves – a metaphysical distinction which is grounded in the different ways in which events and processes exist over time. Thus, according to Stout, there were two explosions yesterday: the one that was happening – a process – and the one that happened – an event. These explosions are different in that their ways of existing over time are different. Or this is what Stout aims to argue for through his Change Argument.⁴

As just mentioned, both events and processes exist over time – i.e., they persist. There are two main accounts of persistence. The first one is *perdurantism* – the thesis that things of a certain kind perdure. Intuitively, something perdures if and only if it is extended in time and has different temporal parts at different times – a different temporal part for each moment of time.⁵ The other account of persistence is *endurantism* – the thesis that things of a certain kind endure. Intuitively, something endures if and only if it is ‘all’ there at each moment at which it exists.⁶ Events, rather uncontroversially, perdure. However, Stout argues that, in this respect, processes differ from events: processes, he claims, endure.

Stout provides the following characterization of the notions of being a perduring entity and being an enduring entity. According to Stout, perduring entities are things that *primarily* have their properties atemporally. Such a characterization can be explained via the perdurantist analysis of sentences like “*x* has the property of *sitting* at *t*”. According to perdurantism, the temporal qualification “at *t*” is part of the subject of the sentence, “*x* at *t*”, which denotes the *t*-temporal part of *x*. In turn, the predication of the

² This article is a reply to the main metaphysical argument put forth in [11] for the thesis that processes endure. I shall examine neither other independent, linguistic motivations for the same thesis discussed in [11, p. 56], nor other arguments for this thesis discussed in other works (e.g. [2] and [10]).

³ [9] argues that this way of articulating the distinction between events and processes cannot be really defended. Indeed, she takes to be a metaphysical-com-semantic rule that if an event *e* has happened by *t*, and *e* was not instantaneous, then *e* must have been happening at some time prior *t*. If one accepts such a rule, then Stout’s characterization implies that every non-instantaneous event is also a process. But, then, the metaphysical distinction between events and processes seems undermined.

⁴ In addition to Stout, many other philosophers argue for a metaphysical distinction between events and processes. See, for instance, [2], [9] and references therein.

⁵ [3], [4], and [7] argue that objects perdure.

⁶ [1] and [6] argue that objects endure.

property *sitting* has no temporal connotation at all: the property is atemporally exemplified by the temporal part $x\text{-at-}t$.⁷ This means that the exemplification of the property *sitting* by the t -temporal part of x is not relativized to times: the exemplification involves only that temporal part and the property of *sitting*. According to perdurance theory (and this is the meaning of Stout's characterization of perduring entities as things that *primarily* have their properties atemporally), the atemporal exemplification is basic and temporal predications, such as "sitting at t ", are analyzed in terms of it. As a result, a sentence like "x has property P at time t " is true if and only if x has atemporally a t -temporal part that has atemporally the property P .

By contrast, enduring entities are things that *primarily* have their properties at times. Let me clarify such a characterization by considering "x has the property of *sitting* at t ". Within endurance theory, the subject of the sentence is simply "x", which denotes a 'three-dimensional' entity x . The temporal qualification belongs to the predicate which results in "having the property of *sitting* at t ". Such a predicate must, now, be analyzed. According to Stout (and this is the meaning of his characterization of enduring entities as things that *primarily* have their properties at times), such a predicate must be analyzed via a notion of exemplification which is fundamentally temporal.⁸ In particular, he adopts the Tensing the Copula strategy, according to which the temporal qualification modifies the relation of exemplification (while keeping the subject *not* tensed). As a result, the previous sentence is analyzed as "x has-at- t the property of *sitting*".⁹ In general, a sentence containing a temporal predication like "x has property P at time t " is true if and only if x has-at- t the property P .

Crucially, Stout assumes that objects endure and that they can change over time (p. 44) – where the notion of change Stout adopts is characterized as follows:

(Change) Something changes if and only if this thing has a property at one time and at a later time the very same thing does not have that very property.

Stout notes that, from (Change), it follows that changeable properties are those properties that a thing can only have at a time and not atemporally. So, with (Change) in place, perduring entities cannot change. Indeed, consider an event such as Prior's life. This event has atemporally different temporal parts with incompatible properties. Now, since Prior's life and its temporal parts have their properties and enter in their relations atemporally, they cannot fail to do so. Hence, Prior's life and its temporal parts cannot satisfy (Change). Given that, it is possible to derive the following conclusion:

(The Change Constraint) Something endures if and only if it may change over time.

3. The Change Argument

Stout argues that processes persist by enduring rather than by perduring – i.e., that they *primarily* have their properties at a time rather than timelessly. The argument he provides

⁷ For the notion of atemporal exemplification see [8, p. 122], [3, pp. 13-14], [7, p. 56], and [11, pp. 46-47].

⁸ Endurance theory rejects the notion atemporal exemplification as incomplete or unintelligible. Indeed, suppose that x is both sitting today and not-sitting tomorrow. Suppose also that x endures. If we adopted the notion of atemporal exemplification, we would get that x is both sitting and not-sitting. Contradiction.

⁹ [5] argues against the tensing the copula analysis. Let us concede that it is a workable position.

aims at establishing that processes endure – and, so, his argument aims at being neutral between endurantism and perdurantism. Now, Stout asks to consider a fight that went on outside his house between 11.55 p.m. and 12.05 a.m. last night. That fight *was happening* at midnight. Hence, it is a process. Stout’s argument – call it “the Change Argument” – is the following [11, p. 50]:

At first it was quite brutal, but after a few minutes it became less ferocious, though as if to make up for this, it got gradually more noisy until the police arrived and stopped it. On the face of it it is a thing that continues through time and has different properties at different times.

Given Stout’s framework, the Change Argument can be reconstructed as follows:

(1) At first, the fight was quite brutal, but after a few minutes it became gradually less ferocious; meanwhile, it got gradually more noisy until it stopped.

According to Stout, on the face of it, from (1) it follows:

(2) The fight is a thing that continues through time and it has different properties at different times.¹⁰

By (Change) and (2), it follows:

(3) The fight changes.

By (3) and (The Change Constraint), we get:

(4) The fight endures – i.e., the fight *primarily* has its properties at a time rather than timelessly.

4. No Chance for the Change Argument

My reply to Stout’s Change Argument is structured along three steps: (P1), (P2), and (P3).

(P1) In order to understand an argument, we need to be able to interpret its sentences, i.e. to give their truth-conditions. Moreover, it is plausible to assume that the truth-conditions of sentences involving notions such as continuity over time or persistence require, implicitly or explicitly, the assumption of a theory of persistence.

(P2) Consider premise (1). By (P1), its truth-conditions require the assumption of a specific theory of persistence for processes. Since processes either endure or perdure, and since the Change Argument aims at being neutral between an endurantist and a perdurantist reading of (1), we can adopt perdurance theory and provide the truth-conditions of (1) within such a theory. As a result, there is a perdurance model *M* that accounts for the supposed truth of (1).

(P3) Since (1) is true in *M*, the other claims in the Change Argument (i.e. claims (2)-(4)) must be true in *M* for the Change Argument to be valid. However, (3) cannot be true in such a model. Stout, then, faces a dilemma: if he keeps fix the neutrality of his argument, this argument is invalid. If, on the other hand, he rejects neutrality in favor of the assumption of endurance theory for processes, his argument is valid, but circular. In either case, the Change Argument fails to establish that processes endure.

¹⁰ By saying that the fight continues through time, Stout cannot mean that it endures. If he meant it just on the basis of (1), he would simply state his intuitions. But, whether or not the fight continues by enduring – instead of by perduring – has to be established by some argument. Hence, I will take such an expression to mean that the fight persists through time.

(P1) In order to understand an argument, we need to be able to interpret its sentences, i.e. to give their truth-conditions. Moreover, it is plausible to assume that the truth-conditions of sentences involving notions such as continuity over time or persistence require, implicitly or explicitly, the assumption of a theory of persistence.

The meaning of assumption (P1) can be clarified by an example. We cannot read off directly from the surface of an ordinary sentence whether the entities it is about persist by enduring or by perduring. In fact, suppose not to have settled whether objects endure or perdure. Then, simply from the sentence “John swims at t ” we cannot establish whether John endures rather than he perdures. If John perdures, then the previous sentence means that he is extended in time and he has a t -temporal part that swims. But, if John endures, it means that numerically the same entity is ‘wholly’ present at more than one time, and that at one of these times, t , he swims. The sentence by itself does not impose one account of persistence. Instead, in providing the truth-conditions of a sentence, such a sentence must be interpreted within a specific theory of persistence that applies to the entities it is about.

This is not to say that we cannot offer considerations in favor of a particular theory of persistence on the basis of natural language.¹¹ For instance, the intuitive truth-value or the intended meaning of certain ordinary talks may be explicable only within a particular theory of persistence. But, these kinds of arguments compare the truth-conditions offered by different theories of persistence, and then they show that one account fares better than the others. In any case, they do adopt one particular theory of persistence in providing the truth-conditions for ordinary talks. Ordinary talks alone cannot do much.

(P2) Consider premise (1). By (P1), its truth-conditions require the assumption of a specific theory of persistence for processes. Since processes either endure or perdure, and since the Change Argument aims at being neutral between an endurantist and a perdurantist reading of (1), we can adopt perdurance theory and provide the truth-conditions of (1) within such a theory. As a result, there is a perdurance model M that accounts for the supposed truth of (1).

The Change Argument aims at establishing that processes endure – and, so, it aims at being neutral between endurantism and perdurantism. Thus, it does not restrict the admissible interpretations of (1) to those formulated within a specific theory of persistence. This means that we can interpret (1) within any theory of persistence we like. So, let us adopt perdurance theory for processes and provide the truth-conditions for (1) within such a theory.

Perdurance theory provides the following account for both our ordinary talks about how a thing is like at a moment of time, and our ordinary talks about how a thing is like at different moments of time. A sentence like “ x is P at t ” is true if and only if x has (atemporally) a t -temporal part that has (atemporally) the property of *being* P . Whereas, a sentence like “a persisting x is P now, and *not- P yesterday*” is true if and only if x has (atemporally) a *now*-temporal part that has (atemporally) the property of *being* P , and x has (atemporally) a *yesterday*-temporal part that has (atemporally) the property of *being not- P* .

Hence, the truth-conditions for (1) within the perdurance theory are as follows:

(1) At first, the fight was quite brutal, but after a few minutes it become gradually less ferocious; meanwhile, it got gradually more noisy until it stopped

¹¹ See, for instance, [1], [3, pp.12-13, 37-38], and [12].

is true if and only if the fight has (atemporally) a t_1 -temporal part that has (atemporally) the properties of *being brutal with grade n* and *being noisy with grade p* and has (atemporally) a successive t_2 -temporal part that has (atemporally) the properties of *being brutal with grade m* (with $m < n$) and *being noisy with grade q* (with $p < q$), and there is a time t_3 , with t_2 preceding t_3 , where none of the fight's temporal parts are present at.

Given the adoption of perdurantism for processes, the on-going fight outside Stout's house is something that perdures. Then, we can conceive a perdurance situation or model M in which:

(M) The fight has (atemporally) a t_1 -temporal part that has (atemporally) the properties of *being brutal with grade n* and *being noisy with grade p* and has (atemporally) a successive t_2 -temporal part that has (atemporally) the properties of *being brutal with grade m* (with $m < n$) and *being noisy with grade q* (with $p < q$), and in which the time t_3 is such that t_3 follows t_2 and none of the fight's temporal parts are present at t_3 .

The truth-conditions for (1) are satisfied within the model M . Hence, (1) comes out true in M as Stout demands it to be. Therefore, there is a perdurance model M that accounts for the truth of (1). Moreover, since the Change Argument aims at being neutral between endurantism and perdurantism, it does not restrict the possible interpretations of (1) to the non-perdurantist ones, and so the model M cannot be rejected as inadmissible at this stage of the Change Argument.

(P3) Since (1) is true in M , the other claims in the Change Argument (i.e. claims (2)-(4)) must be true in M for the Change Argument to be valid. However, (3) cannot be true in such a model. Stout, then, faces a dilemma: if he keeps fix the neutrality of his argument, this argument is invalid. If, on the other hand, he rejects neutrality in favor of the assumption of endurance theory for processes, his argument is valid, but circular. In either case, the Change Argument fails to establish that processes endure.

In (P2) we showed that (1) is true in the model M . However, (3) is false in it. But, then, the Change Argument is not valid, and so, its conclusion is blocked. The reason is the following. In M all the property-attributions are atemporal: the perduring fight has atemporally the t_1 -temporal part and it has atemporally the t_2 -temporal part; the t_1 -temporal part has atemporally the properties of *being brutal with grade n* and *being noisy with grade p* ; the t_2 -temporal part has atemporally the properties of *being brutal with grade m* (with $m < n$) and *being noisy with grade q* (with $p < q$). But, then, nothing can have a property and then not to have it. So, nothing in M can satisfy the right-side of (Change): something changes if and only if this thing has a property at one time and at a later time the very same thing does not have that very property. It follows that nothing can change in M . Hence, (3) is false in M . But, then, (3) does not follow from (1), Stout's Framework, and the premise that the Change Argument aims at being neutral between endurantism and perdurantism.¹² Now, this means that the Change Argument is not valid, and so its conclusion is blocked.

If, on the other hand, one wants the Change Argument to be valid, one must restrict the admissible interpretations of (1) to those that do not take processes to perdure – i.e. one must reject the premise that the Change Argument aims at being neutral between

¹² It is crucial to note that I am not saying that (3) does not follow from (1) alone – I am saying that (3) does not follow from (1) together with the premise of neutrality and Stout's framework, which includes both (Change) and the assumption that objects endure and can change over time.

endurantism and perdurantism. Now, since processes either endure or perdure, this means to presuppose endurance theory for processes in giving the truth-conditions for sentences like (1) and in stating the Change Argument. But, then, such an argument is circular: its conclusion has been already settled from the very beginning, viz. that processes endure. Hence, if the aim of the Change Argument is to establish that processes endure – as it seems –, then it misses its target.

Summing up, Stout faces a dilemma: if his argument aims at being neutral between endurantism and perdurantism, then it is not valid. If, on the other hand, he rejects neutrality and presupposes from the very beginning that processes endure, then his argument is valid, but circular. In either case, the Change Argument fails to establish that processes endure.

5. An Objection from the Perdurance Notion of Change and its Rejection

It might be objected that both my reply and Stout's Change Argument don't succeed because they illegitimately adopt (Change) under a perdurantist view. Even though I shall argue that this objection ultimately fails in the context of Stout's framework, its examination is fruitful in that it improves our understanding of the notion of change.

The objection claims that (Change) is unacceptable for perdurance theory. Indeed, (Change) is formulated by using the concept of '*having a property at a time*' that does not even make sense within perdurance theory – this concept being acceptable only within endurance theory. So (Change) isn't neutral between perdurantism and endurantism – it effectively presupposes endurance theory. In light of this result, perdurance theory adopts, instead, its own notion of change:

(PerdChange) Something changes if and only if it has a temporal part at a time t that has a property and it has a different temporal part at a later time t^* that does not have that property.

As a consequence, (The Change Constraint) – according to which something endures if and only if it may change over time – is obviously false. This principle should be, instead, substituted by something like the following pair:

(Endurance Constraint) Something endures if and only if it satisfies (Change).

(Perdurance Constraint) Something perdures if and only if it satisfies (PerdChange).

According to the objection, these results affect Stout's Change Argument as well as my reply. First off, my reply is unsound: since (Change) is false or unintelligible under the perdurance model M , I can't claim that Stout's Change Argument is invalid. Instead, given the assumption of perdurance theory, and so given the adoption of (PerdChange), (3) – that the fight changes – is true in the perdurance model M after all. Second, since the Change Argument adopts (Change), then this argument actually presupposes the assumption of endurance theory – i.e. the argument is circular. Then, the 'right' conclusion to draw from Stout's argument is my second horn of the dilemma: this argument fails because it is circular, namely its conclusion has been already settled from the very beginning, viz. that processes endure.

This objection would be compelling if all entities (viz. objects, processes, and events) persisted in the same way – either by enduring or by perduring – and if we had to

establish how they persist. However, given Stout's framework according to which objects endure and can change, such an objection is flawed. Indeed, the characterization of change that accounts for changing enduring objects is (Change). Now, (Change) and (PerdChange) clearly describe different metaphysical phenomena. In fact, if we supposed that both (Change) and (PerdChange) describe cases of change, we would be led to the following absurdity: a thing has a temporal part at a time t that has a property and it has a different temporal part at a later time t^* that does not have that property if and only if this thing has a property at one time and at a later time the very same thing does not have that very property. Hence, when we interpret (1) within the perdurance model M , and we thereby adopt (PerdChange), we aren't accounting for change – if "change" describes the kind of phenomena objects undergo when they satisfy (Change). We're accounting for something different, something that may be called "variation". So, it is not the case that, under the assumption of perdurance theory, (Change) is false. Instead, within Stout's framework, the assumption of perdurance theory makes (Change) simply vacuously true in that no perduring entities can change as objects do. Hence, the objection is mistaken. To repeat, it is not the case that (Change) is false under a perdurance reading. On the contrary, since perduring entities cannot change as objects do, perduring entities make (Change) vacuously true.

At this point, someone may have some semantical qualms. I reserved the expression "change" to describe the kind of 'change' that happens to objects, and the expression "variation" to describe the different kind of 'change' that occurs to perduring entities that vary their properties. Now, as the last claim highlights, someone may say that 'change' is a polysemic concept and, as such, it can be used to describe different metaphysical phenomena – both those captured by (Change), and those captured by (PerdChange).¹³ I have no particular complaint with these kinds of semantical issues. However, given that Stout aims to argue that processes 'change' in exactly the same way as objects do, the kind of 'change' we're after is (Change). And, once this constraint has been fixed, my argument starts and so Stout's argument fails.

6. Conclusions

The Change Argument aims to argue that processes endure and, so, to reject the thesis that they perdure. However, as I argued, it does not have the resources to establish such a conclusion. The starting point of my reply is the premise that the truth-conditions of a statement like (1) have to be provided within a specific theory of persistence. Stout's Change Argument aims at being neutral between endurantism and perdurantism, and so it doesn't restrict the admissible interpretations of (1) to those formulated within a specific theory of persistence. So, it is legitimate to analyse (1) within perdurance theory. On such a basis, I showed that there is a perdurance model M within which (1) is true, but (3) false. Hence, (3) does not follow from (1), Stout's Framework and the premise of neutrality. So, the Change Argument is not valid. If, on the other hand, Stout rejects the constraint of neutrality in favor of the assumption of endurance theory for processes, the

¹³ Clearly enough, these principles must be modified in their left-sides in order to distinguish the different kinds of phenomena they characterize, e.g. (Change) becomes "something endurantistically changes if and only if this thing has a property at one time and at a later time the very same thing does not have that very property". On the other hand, (PerdChange) becomes "something perdurantistically changes if and only if it has a temporal part at a time t that has a property and it has a different temporal part at a later time t^* that does not have that property".

Change Argument is valid, but circular: this argument presupposes what it aims to argue for, viz. that processes endure. Hence, in either case, the Change Argument fails to establish that processes endure.

The moral of this article is rather simple. I suggest that, in order to solve the question about how processes persist, it is better for us to turn our attention to other kinds of phenomena. Two cases, I think, are more promising for solving our question. The first case is what I've called "the continuity through time case". We have the idea that a process like a pregnancy is the same through time. For instance, we would want to say that this pregnancy that is going on for six months is the same as that that was going on two months before. The real issue is how to account for the notion of sameness involved in such a scenario. The second case can be labeled "the modal rigidity case". Suppose that my walking to the station terminates when I effectively reach it. It is intuitive to say that the same process could have been interrupted before my reaching the station.¹⁴ The issue here is to account for our modal intuitions concerning processes. What is the theory of persistence that better accounts for these cases? Perdurantism theory, endurance theory, or some third contender? I suggest that the investigation of these cases provides a better ground to assess how processes persist.¹⁵

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¹⁴ This case is discussed in [9] and in [10].

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