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process, action, & experience

EDITED BY
ROWLAND
STOUT



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Rowland Stout

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Introduction

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1. Introduction

There are two ways to think about occurrences: either as ongoing processes or as completed events. On the one hand, we might think about the ongoing process of my giving a lecture this morning, say. This is something that was happening for a certain period of time—my giving the lecture was happening at every moment during that period. So, describing the ongoing process, we might say that what was happening at 9.30 this morning (my giving the lecture) had been going on for half an hour already and was now causing some irritation or amusement in the audience. On the other hand, we might think about the lecture as a completed event—something that is extended over a period of time. At no moment during that period can the completed event be identified. Describing the completed event, we might say that what happened this morning lasted for an hour, but seemed to several people to have lasted much longer.

This distinction between ongoing and completed occurrences corresponds with a distinction in the perspectives we have when thinking about these occurrences. In describing some occurrence as ongoing we occupy a perspective from within the happening of that occurrence, whether it be past, present, or future. The occurrence is present to that perspective, and in occupying it we are thinking about the occurrence, as it were, from the inside. In describing an occurrence as completed, we are occupying a temporal perspective outside of the occurrence—a perspective from which the whole extent of the occurrence can be thought about, but not a perspective to which the occurrence is itself present.

This distinction in perspectives between describing ongoing processes and describing completed events is associated with the linguistic distinction of *aspect*. When we describe occurrences as ongoing we use the progressive aspect and when we describe them as completed events we use the perfective aspect.¹ Aspect is independent of tense. Just using

¹ Some linguists take the imperfective to be the real aspect rather than the progressive, and many of the philosophers interested in action and aspect take the contrast to be between perfective and imperfective. But I take it that it is the progressive and not the imperfective we need for this distinction, as the imperfective

the simple tenses of past, present, and future, we can generate the following propositions, and the list could be extended to incorporate more complex tenses.

Past progressive: 'I was delivering a lecture this morning.'

Present progressive: 'I am delivering a lecture now.'

Future progressive: 'I will be delivering a lecture tomorrow morning.'

Past perfective: 'I delivered a lecture this morning.'

Present perfective: 'I deliver a lecture now.'²

Future perfective: 'I will deliver a lecture tomorrow morning.'

I have used the words 'process' and 'event' to mark the distinction I am after. But it is really the qualifying adjectives 'ongoing' and 'completed' that are doing the work. While it may be that the word 'event' is usually reserved for completed events, it is by no means the case that the word 'process' is reserved for ongoing processes. As Antony Galton notes in this volume, it is commonly applied to abstract temporal patterns that are realized in specific occurrences. We might talk about the process of photosynthesis or the Bessemer Process, and in so doing we are not describing specific occurrences at all. On the other hand we might also describe what I was doing this morning by saying that I was in the process of delivering a lecture. And this may lead to the usage I want, which is to describe the particular ongoing occurrence that I was engaged in as a process.³

Given that perfectly described completed events cannot be said to be present to an observer, it follows that a subject's own immediate conception of what they are doing, thinking, feeling, and perceiving is only describable progressively—from the 'process' point of view. I know what I am doing in a more direct way than the way I know what I did, and this applies similarly to what I am feeling, thinking, seeing, etc. The subjective perspective, if it has a special role in understanding a subject's mental life, is a perspective on their ongoing mental life—their life as a process. Assuming an objective conception of the mind must honour this subjective perspective, it looks as though we should be approaching the philosophy of mind and action by considering ongoing processes.

Despite this, the 'event' conception of the things that happen in the mind has dominated philosophical work in this area throughout the twentieth century. Many of

includes descriptions of habitual behaviour like 'I go fishing on Sundays.' There is a sense in which habits are ongoing, but what I am after here are ways to describe *instances* of ongoing processes. Comrie (1976) presents the classic treatment of aspect within linguistics, while Taylor (1986), Mourelatos (1978), and Galton (1984) are important resources for a philosophical understanding of the distinction.

² The present perfective (not to be confused with the present perfect) is usually taken to be an empty category, and certainly this sentence does sound strange—a natural reading of it is as a disguised future tense sentence, as Galton (1984, section 1.2) argues. But I think there may be contexts for its use as a present tense sentence. Perhaps, in the course of a lecture, I describe to the students the schedule of lectures for the term, including the present one. I am describing the present lecture as a completed event, just as I describe the past and future ones.

³ Using the word 'process' to describe occurrences that are treated progressively rather than perfectly has a philosophical pedigree. See Comrie 1976, 51 and Mourelatos 1978.

the physicalist reductions and identity theories that have characterized this period deal primarily with mental states rather than mental occurrences. For example, the Turing machine model that is central to functionalism treats the mind in terms of states, and the place for mental occurrences is only as state transitions.⁴ Similarly, psychological cognitivism treats perception in terms of a subject being in experiential or representational states caused in certain ways by the environment. Token identity theories either identify a person's state of mind with a particular state of their brain, or identify completed events within their mind as completed events within their brains. While there has been much debate about the right way to think about events, there has been a consensus in these models of the mind that there is no need to consider ongoing processes to account for the dynamic aspect of our mental lives.

The hypothesis that is being tested in this book is that describing mental occurrences, such as actions and experiences, as ongoing processes using the progressive aspect can yield a better philosophical understanding of these occurrences than describing them as completed events using the perfective aspect. This means that actions are better understood by considering people doing things than by considering the things people have done, and that perceptual experience is better understood by talking about people experiencing things than by talking about the experiences people have had. Very roughly, the idea is that the standard philosophical accounts that treat actions and experiences as events and states lose, or at any rate misread, the *subjective* aspect of these phenomena, something that can only be captured by thinking of these phenomena from inside the course of their happening. This is by contrast with a very powerful current in the history of analytic philosophy since the start of the early modern era, which has favoured consideration of the completed event over the ongoing process.

I speculate in Section 2 about why this dominance of the 'event' conception might have happened. The suspicion that this dominance has led the philosophy of mind and action into a dead end may lead us to rethink much of this philosophy with a 'process' conception. In Section 3 I consider some of the ways this new thinking may help, specifically with how to think about action and experience. And in Section 4 I introduce some of the ways that the metaphysics of processes has been thought about. All the authors of this volume have contributed to this rethinking of the philosophy of mind and action, and in the final section of this introduction I describe some of the questions that need to be answered if we take the idea seriously, and explain briefly how the chapters in this book approach these questions.

2. The Philosophical Rise of the Event

An ongoing process manifests itself in a sequence of outcomes over time—a sequence that satisfies a pattern characteristic of that type of process. So the ongoing process of my delivering the lecture this morning resulted in a special kind of sequence of

⁴ See Putnam 1967.

utterances and interactions with an audience. This sequence of outcomes happened (perfective). It is a completed event not an ongoing process.⁵ In general we can say that an ongoing process results in a completed event—an event consisting of a sequence of stages satisfying the pattern for that type of process. This sequence, as Newton in particular discovered, can sometimes be modelled mathematically. Consider the simple example of a body—say an arrow—moving under its own momentum with no forces acting on it. (For the sake of the example we are assuming no gravity or air resistance.) What is happening at any one moment is the ongoing process of the arrow moving through space. This process has a sequence of outcomes that make up the completed event of the arrow moving through space. This sequence can be described using the familiar formula from Newtonian kinetics:

$$\mathbf{s} = \mathbf{p}/m \cdot t + \mathbf{s}_0 \quad (\text{where } \mathbf{s} \text{ is the position vector of the arrow, } \mathbf{s}_0 \text{ its initial position vector, } m \text{ its mass, } t \text{ elapsed time, and } \mathbf{p} \text{ a constant vector representing the momentum}).$$

With differential calculus we can apply mathematical measures not just to the sequence of stages but also to the change within the sequence. The rate of change of position of the arrow over time (ds/dt) can be calculated as the limit as δt tends to 0 of $\delta s/\delta t$, where δs is the difference in position of the arrow across a small time interval δt . In this case it turns out that $ds/dt = \mathbf{p}/m$. While $\delta s/\delta t$ is a measure of a feature of a completed event—a change that happened (perfective)—it seems to be the basis for calculating a measure— ds/dt —of an ongoing change that was happening (progressive). Working only from a formula for the sequence of stages, we can say that at time, t , the arrow was *moving* (progressive) with velocity \mathbf{p}/m .

The moral of the success of Newtonian physics and mathematics might seem to be that descriptions of completed events—sequences of stages—are all we need for a scientific account of the occurrences in nature. From these, by applying a bit of differential calculus, it looks as though we can describe change in nature. These descriptions can employ the progressive aspect, but such descriptions are grounded in perfective aspect descriptions. So it seems that the laws of nature apply to completed events not to ongoing processes, and we can derive our talk of ongoing processes from them.

The success of another mathematical tool—that of probability theory developed in the seventeenth century by Pascal, Fermat, Huygens, and Bernoulli, among others—may also have been influential in establishing the primacy of completed events over ongoing processes. Probability theory emerged from an attempt to apply mathematics to gambling, and what you gamble on are outcomes not processes. Starting with the

⁵ Although it does sound wrong to describe a sequence of stages as happening rather than as having happened, we can talk of a sequence of stages as *unfolding*, using the progressive. But I am inclined to conclude from this not that the sequence of events is best thought of as an ongoing process, but that its unfolding is. The unfolding of a completed event is an ongoing process. This may seem clearer if one thinks of the spatial metaphor of unfolding more literally.

principle that equivalent outcomes within a possibility space are assigned equal probabilities, probability calculus was developed, and following fast on its heels came frequency analysis and statistics.

Seventeenth- and eighteenth-century Enlightenment philosophy was clearly impressed by the power of the new science. To the extent to which Newtonian physics and probability theory describe nature, nature contains completed events rather than ongoing processes. Related to this was the British Empiricists' conception of perception in terms of *impressions* received from the world. Impressions are the outcomes of ongoing processes (they are impressions not impressings). What we are given in perception according to this conception are sequences of stages not the ongoing processes themselves, and to the extent to which our idea of the world must be derived from experience it follows that the world conceived as such contains event-stages not ongoing processes.

By the end of the nineteenth century the event was king. The philosophical treatment of both time and causation worked with the assumption that these concepts had to be located in a natural world constituted as a succession of events. Both McTaggart's A and B series described completed events spread along a temporal dimension. His was a picture that had no room for ongoing change or flux. Causation, following on from the work of Hume and Mill, was to be understood as a relation—psychological, logical, or counterfactual—between events within a succession of events. This picture of causation had no room for any ongoing causal process of something making something else happen. Even ethics, certainly as understood by the utilitarians, became focused on the outcomes rather than the processes leading to these outcomes. It had become less a matter of living well and more a matter of determining the best outcomes. To the extent that degree of pleasure was taken to determine the quality of outcomes, there was still a role for thinking of occurrences progressively, since pleasure is an aspect of experience as an ongoing process and not as a completed event. But as preference took over from pleasure in the various sorts of decision theory and social choice theory that emerged in the twentieth century even this role for thinking in terms of ongoing processes was lost.

3. The Recognition of the Need for Processes

The questionable influence of the philosophical rise of the event on the philosophy of causation, the philosophy of time, and moral philosophy might in itself motivate a reconsideration of the metaphysics of occurrences, but in this book we are primarily concerned with implications for the philosophy of mind and action. The ontological supremacy of the event was to dominate analytic philosophy of mind in the second half of the twentieth century. While philosophers generally made no distinction between events and processes, the occurrences that concerned them look more like

completed events than ongoing processes. Donald Davidson is often taken to be the central figure here, arguing in a series of papers collected in his 1980 book that our talk of causation depends on the existence of a category of particular occurrences he called events, that actions are events, that there are mental events, and that these mental events are at the same time physical events. However, although Davidson generally used the perfective aspect to describe what he was interested in, as David Charles points out in this volume, he was not thereby excluding ongoing processes. Indeed, one of his best-known arguments for taking actions to be particular entities—events as he described them—works better if we are talking about ongoing processes rather than completed events.

The conditions under which (1) ‘Sebastian strolled through the streets of Bologna at 2am’ is said to be true must make it clear why it entails (2) ‘Sebastian strolled through the streets of Bologna.’ If we analyse (1) as ‘There exists an *x* such that Sebastian strolled *x*, *x* took place in the streets of Bologna and *x* was going on at 2am’ then the entailment is explained...but this requires events as particulars. (Davidson 1980, 186)

Here, even though Davidson is apparently using the perfective ‘strolled’, he is not really describing a complete event but instead an ongoing process—something that he actually describes as ‘going on’. The argument would read better if (1) were ‘Sebastian was strolling through the streets of Bologna at 2 a.m.’ But even though Davidson’s conception of an event as a particular identifiable occurrence might well correspond to that of an ongoing process, he does construe events as causally related to one another when they instantiate strict general laws, and here he is construing them as completed events—as the *outcomes* of ongoing processes.

Even if Davidson can be interpreted as having it both ways with respect to his conception of occurrences as events, there is less ambivalence with other philosophers of mind and action. Jaegwon Kim exemplifies the conception of mental occurrences as completed events, where such events belong to the same category as states.

We also speak of mental or physical *events*, *states*, and *processes* and sometimes of *facts*. A process can be thought of as a (causally) connected series of events and states; events differ from states in that they suggest *change*, whereas states do not. The terms ‘phenomenon’ and ‘occurrence’ can be used to cover both events and states. We often use one or another of these terms in a broad sense inclusive of the rest... Some events are psychological events, such as pains, beliefs, and onsets of anger, and these are instantiations by persons and other organisms of mental properties. Some events are physical, such as earthquakes, hiccups and sneezes, and the firing of a bundle of neurons, and these are instantiations of physical properties. (Kim 1996, 6)

It is this kind of assimilation that has led philosophy of mind to embrace what Helen Steward has called the network model of causation—a model in which events and states (and perhaps even facts) all figure equally as productive causes working together in grand networks to produce other events and states. Steward not only criticizes this model as working with an incoherent account of causation as well as an incoherent

notion of token states, but also shows how it is at the heart of functionalism and various mind-brain token identity theories.⁶

If we think of perception and action in terms of the network model as interweaved sequences of stages we are forced to treat them both as kinds of interfaces between mind and world. The early stages of perception sequences are worldly and the later stages are mental, and the sequences themselves cross from one to the other. The same goes for action, just with mind and world reversed. Thus we get the classic causal theories of action and perception. Such theories involve a kind of mind-world dualism. If it is possible to divide these interface sequences into mental and physical stages it becomes impossible to make sense of the idea of the world being given to a subject in experience. The world is presented to one side of the interface and the subject is given that presentation on the other side. Agency is on the mental side of the interface, and that means that agency does not reach out into the world. Both subject and agent are trapped on one side of the sequence of events.⁷

These theories that understand perception and action in terms of causes and effects that are events ('event-causal' models) encounter some technical difficulties too that may be symptomatic of this deeper issue. For example, there is the problem of deviant (or wayward) causal chains. The right sort of worldly input might cause the right sort of mental result for a case of perception, yet the sequence as a whole not count as a case of perception because it causes it in the wrong way. And, similarly, the right sort of mental input might cause the right sort of worldly output for a case of action, yet the sequence as a whole not count as action because it causes it in the wrong way.⁸

There are two further arguments for treating action progressively (as an ongoing process), which have been highlighted recently in the reappraisal of Anscombe's work exemplified in Ford et al. (2014) and in Thompson (2008). The first concerns practical reason. For Anscombe (1957), what is characteristic of intentional action is that a certain sense of the question 'Why?' has application to it; this sense is one that asks for reasons that are justifications. This in itself does not mean that intentional actions should be described progressively, since there is no particular reason to use the progressive aspect rather than the perfective when describing an action for which you are demanding an explanation. 'Why did you make an omelette?' is as good a demand for a rationalization as 'Why are/were you making an omelette?'

But Michael Thompson (2008) has argued that the fundamental form of action rationalization is one where you explain something you are doing or have done in

⁶ See Steward 1997, 222.

⁷ Jennifer Hornsby (1993) provides a good account of the danger of dualism for a standard sort of causal theory of action, which is particularly interesting for present purposes, as her own shift over the years since her 1980 book from thinking of action in terms of events to thinking of them more in terms of process has made much more sharply focused how anti-dualistic her conception is. One influential opponent of causal theories of perception is McDowell, who takes the dualistic implications of these theories to be the root of a certain sort of scepticism that must be avoided; see for example McDowell 1982.

⁸ Davidson (1973) raised this problem for his own version of a causal theory of action, and it has been a constant issue for causal theories since then (see Stout 2010).

terms of something else you are doing. For example, we may explain why I broke the eggs or am breaking eggs by saying that I am making an omelette. He calls this naïve action explanation.⁹ But if one is providing a justification and not merely a causal explanation, one cannot say the following: ‘I broke eggs because I made an omelette,’ although one can say: ‘I broke eggs because I am making an omelette.’ A naïve action explanation, as opposed to a sophisticated one, describes the action in the explanans as an ongoing process using the progressive aspect. Thompson’s next move is to reverse Anscombe’s formula and argue that intentional actions are such as to be described in *answers* to demands for rationalizations. So, instead of saying that intentional actions are those to which a certain sense of the question ‘Why?’ is given application, we should say that intentional actions are those to which a certain sense of the question ‘How?’ is given application. Intentional actions are the rationalizers rather than the rationalized. And, as we have just seen, rationalizers that are actions must be described using the imperfective aspect. So Thompson has argued that actions must be described as ongoing processes—from the embedded perspective of the agent—if their relationship with practical rationality is to be revealed.

The second argument that has emerged recently for treating action progressively concerns practical self-knowledge. In trying to get more precise about this special sense of the ‘Why?’ question, Anscombe (1957, 49ff.) comes up with a second way of characterizing intentional action, which is that an agent knows what they are intentionally doing directly and without the need for observation. Davidson dismissed this (1971, 50), arguing that someone might intentionally make ten carbon copies while not being at all sure that that is what they are actually doing unless they check. But Thompson rejects Davidson’s carbon copy counterexample to Anscombe’s principle of practical self-knowledge, claiming that it does not represent a normal case of intentional action.¹⁰ If central cases of intentional action do satisfy Anscombe’s principle, and that principle requires describing action progressively, then the philosophy of action does after all have to accommodate the conception of action as an ongoing process.

There are other recent developments in the philosophy of mind that suggest we may need to treat experience and other mental occurrences as ongoing processes. One is the development of enactivist approaches by philosophers following in the footsteps of Maurice Merleau-Ponty and J.J. Gibson.¹¹ This approach takes the way someone engages actively with their environment to determine what we should say about their mind. Experience is not construed as the passive reception of impressions from the world, but rather as an active interrogation of the world. The upshot of this process of active interrogation may be that the person is representing things in a certain way. But representations do not figure in the process. According to this approach we should explain the ongoing perceptual processes of listening, watching, touching, exploring,

⁹ Thompson (2008) claims that rationalizations that mention states of mind—desires and beliefs—are more sophisticated rationalizations than these naïve ones, and depend on them.

¹⁰ See Thompson (2014) and Stout (this volume).

¹¹ See Noë (2004), Merleau-Ponty (2013 [1945]), Gibson (1966).

attending, etc. first, and only then have the basis of an account of the completed events of hearing something or seeing something.

Another recent development is an interest in the metaphysics of experience, and in particular in the question of whether experience needs to be thought of as a state, a process, or an event for there to be anything it is like to have experience. Experience is often construed in the philosophy of mind as a state—the state of being consciously aware of something. And it is essential to conscious awareness that what a subject is aware of must be *present* to the subject.¹² So, we can only ever be in the state of experiencing something that belongs to a metaphysical category of things that can be *present*. For something to be present it must be the sort of thing that can have properties at the present time, which means it must be the sort of thing that can have properties at a time rather than timelessly. Numbers, for example, are not the sorts of things that can be present, and presumably this is why we cannot be consciously aware of them or be in an experiential state where numbers are the experienced objects. But three-dimensional objects can be present to a subject, and as such can be objects of a state of awareness. Arguably, ongoing processes likewise have their properties at a time and may be present to a subject.¹³ This means that we can be in the state of being consciously aware of the ongoing process of an arrow moving through the air, for example.

But are states themselves things that can be present? That depends on how we construe states. Galton in this volume makes a useful distinction between states as things that may obtain for some time and states as instantaneous instantiations of properties. If an arrow is on a table, it may continue in that state for some time, and then we can say that the state itself continues. In this respect it is like an ongoing process. Indeed, we might think of it as a limiting case of a process—a sort of static process. The state of an arrow being on a table may be present to a perceiving subject and be the object of a state of conscious awareness. But now suppose that the arrow in flight passes through point P at time T. The arrow being at point P at time T is not the sort of state that obtains for any period of time, and it is not clear that it is the sort of thing that can be present to a subject. While watching an arrow flying through the air one might be consciously aware of its passing through point P (this is being aware of an ongoing process), but perhaps one cannot be aware of its being at point P at time T.

There is a similar difficulty in thinking of completed events as objects of conscious awareness. The completed event of the passage of the arrow from one place to another is never present to an observer and so is at no moment the object of an experiential state of conscious awareness.¹⁴ This is true in particular of completed events that

¹² This claim must be understood in a certain way that makes sense of the apparent possibility of being visually aware of long since extinct stars.

¹³ This conception of a process is controversial and certainly not shared by all the authors in this volume. See Stout 2016 and Crowther's chapter in this volume for contrasting views on the matter.

¹⁴ Soteriou (2013) resists concluding that we are never in the state of experiencing a succession of things by devising a new ontological category of 'occurrent state', where the state one is in during an interval depends on the occurrences that occur in that interval. See Steward (present volume) for a discussion of this.

are sequences of states, whether the states are themselves continuing things or instantaneous things. At no time are you aware of the whole sequence. But even if there is no moment when you are in the state of being consciously aware of the whole sequence, it may nevertheless be a *fact* that you have been aware of the whole sequence—that you *experienced* it. Matthew Soteriou, in the present volume, provides the nice example of Glen Gould playing Bach's Goldberg Variations. At no point is a performance of a piece of music, understood as a completed whole, present to the listener. But of course it was experienced, even if it was never the object of a moment of conscious awareness.

This may support Brian O'Shaughnessy's (2000) 'processive' conception of experience, according to which experience should not be understood as a *state* at all. But it should be observed that the argument as just presented applies only to experience of things that are not entirely present at one time. O'Shaughnessy himself does not employ this argument, talking instead of the need for experience, even of static objects, to be constantly renewed. So, according to his argument, experience cannot occur without something happening. O'Shaughnessy claims that states may obtain even when nothing at all is happening. He argues plausibly that experience cannot continue in such a freeze, and concludes that experience cannot be a state.

O'Shaughnessy does not distinguish between ongoing processes and sequences of stages. So his processive view of experience is not as such a position that favours thinking of experience progressively in terms of the category of process rather than that of event. His point is to reject a conception of experience as a state. Although the idea has not been explored much in the literature yet, it looks as though thinking of experience as based on ongoing experiential processes has the advantages of both the stative and processive views. In particular, the problem of the unity of conscious experience seems to beset a conception of experience as a sequence of stages, whereas conceptions of experience either as state or as ongoing process may have less difficulty with this. If I experience A and then I experience B we may very often be able to say that I thereby experience A then B, where the temporal succession is within the scope of the experience and not just a temporal succession of experiences. Michael Tye (2003) has argued that experience is never to be understood as a succession of experiences; between the time you wake up and the time you go to sleep you have precisely one experience—already unified. And even without going this far it is possible to treat experiences as temporally unified if they are continuing states or ongoing processes.

4. The Metaphysics of Process

Seeing that something has gone wrong with conceptions of action and perception as causally connected sequences of stages philosophers have responded in a variety of ways. Gilbert Ryle (1949) and philosophers inspired by Wittgenstein, like Elizabeth Anscombe (1957), are commonly taken to have rejected the idea that perception and

action are constituted as causal processes at all, and are described as anti-causalist. In fact, what they were keen to reject was a conception of action and perception as involving mental or worldly pushes, where the causes are completed events or states (what became known as ‘Humean causation’). A more Aristotelian conception of causation involving an agent making things happen by exercising their causal powers or being affected by the world by the exercise of their power to become sensitive to the presence of things was not rejected by these so called anti-causalists, though not much developed in this period. It has been developed since in work like Charles (1984), Coope (2007), Hyman (2014), and Marmodoro (2014).¹⁵

Aristotle’s account allows change to be treated as an ongoing process in the first instance. The exercise of a capacity (or the actualization of a potentiality) does not need to be taken as the completed exercise (or actualization) of a potentiality, but can be taken as the exercise or actualization in process—the *exercising*. Note the process/product ambiguity in the English words ‘actualization’ and ‘realization’. Certainly by insisting on treating action and perception using the progressive we can avoid thinking of them as sequences of completed stages. This is the point of Michael Thompson’s (2008) naïve action theory. Thompson is resolutely opposed to ‘ontologizing’ ongoing processes, however, and resists the assumption that there must be some entity corresponding to our progressive descriptions. Given that our progressive descriptions do not pick out completed occurrences, he thinks that we should not think of them as picking out occurrences at all. For Thompson, the source of the dualistic picture with spirit and nature pushing each other around is the ontologizing of action and perception.

But there has been a lot of work on the ontology of processes that is more optimistic about the possibility of developing a satisfying metaphysical account of occurrences as ongoing processes without risking dualism. The metaphysics corresponding to our use of the progressive is currently a very lively area of philosophical debate with positions ranging from the anti-ontological through a ‘stuff’ conception to various conceptions that treat ongoing processes as particulars, distinct from and not dependent on completed events. Alexander Mourelatos (1978) wrote a highly influential paper making use of the linguistic distinction between progressive (or imperfective as he had it) and perfective aspects and linking it to the distinction between mass and count nouns. Ongoing actions were taken to be things one could have more or less of—kinds of stuff rather than particulars. Whereas material stuff fills space, process stuff fills time. Complete chunks of it constitute events.

Jennifer Hornsby (2012) and Thomas Crowther (2011 and this volume) have tried to develop Mourelatos’ conception, while Helen Steward (1997, 2013, 2015), though starting from Mourelatos, has developed a different conception of processes as particulars rather than stuffs, and Rowland Stout (1996, 2016) has developed a conception of

¹⁵ See also the attempt by Alicia Juarrero (2002) to bring an Aristotelian approach to dynamic systems analysis.

ongoing processes as dynamic continuants. It should be observed that there are two ways to make sense of the idea that there may be more or less of an activity like talking. If I say that there is more talking than there was yesterday, I might either mean that there are more people talking or mean that the process of talking has been going on for longer. Only in the second case does the activity stretch through time. And only in the first case is the talking a kind of activity that may be said to happen at a time, and be ongoing. So, just as with individual occurrences, we can make the distinction within activity stuff between ongoing activity and activity that is extended in time. Extended activity may be thought of as the stuff of events in some way, but ongoing activity may not.

5. Outstanding Questions

In this volume David Charles questions a tempting way to think about actions, processes, and events, that he calls the Philosophical Theory of Events. The Philosophical Theory of Events accepts Davidson's claim that we must posit unrepeatable particulars that can be referred to when talking about actions. And it takes the way we talk about processes—i.e. as continuing over time while changing and sometimes being interrupted—as showing that these particulars cannot be processes. However attractive this theory finds the processive talk, it is stuck with the assumption that completed events are the only occurrent particulars. Philosophers interested in thinking of action in process terms (including most of the other authors in this volume) take the view that the only particulars that can be identified here are events that extend through time with temporal parts—not things that continue. So they find ways to avoid thinking of action in terms of continuant process particulars, either by refusing to ontologize processes altogether, by treating processes as dependent on perdurants of some sort, or by taking the process to be a mass rather than a particular.

Charles considers and rejects a variety of such positions, including Galton and Mizuguchi's (2009) proposal that a process as a whole moves forward through time by having stages located in successive temporal windows. He recommends, with some appeal to Aristotle, an ontological position that accommodates continuant process particulars. One and the same process continues through time if it is the realization of a single capacity under the guidance of a single action plan. Such processes might exist alongside and independently of events. But Charles also considers the possibility that events are generated from these processes or perhaps that they are identical to these processes considered under the perfective aspect.¹⁶

Antony Galton is concerned here, as in a series of papers over the last ten years, with the ontological relationship between processes, events, and states. What all this work stresses is the multiplicity of ways that the word 'process' is generally used. Here the

¹⁶ In arguing this way, Charles is one of the very few philosophers who defends a conception of processes as continuant particulars. But see also Stout (2016).

central idea is to think of a process as an abstract pattern of occurrence—a temporal pattern specifying a way of filling (or spending) time. Such patterns are realized by particular tokens which may be conceived of either historically (using the perfective aspect) or experientially (using the progressive or continuous). The historically conceived realization of a process pattern is an event. The experientially conceived realization of a process pattern is a sequence of instantaneous states, although what is experienced at any one time is just one such state.¹⁷

This notion of state is distinguished from another sense of the word where a state is a static process—an open pattern of no-change. Galton's picture here is an instance of what Charles calls the Philosophical Theory of Events. What makes that inevitable is his starting position of thinking of abstract processes as ways of filling time (as opposed to thinking of them in an Aristotelian spirit as ways of exercising capacities). This means that realizations of these patterns must either themselves take up time—be temporally extended events or sequences of stages—or be instantaneous states.

Thomas Crowther defends a version of the view originating in the work of Mourelatos that activity/process is the stuff of events. Like Galton (and I think this is common to the Philosophical Theory of Events generally) he works with the assumption that the ontology of process is concerned with the way occurrent things occupy periods of time. This assumption rules out the possibility of continuant processes, since continuants do not occupy time, but endure through time. So Crowther launches an attack on the arguments in Stout (2016) for thinking of processes as continuants. More generally he attacks the idea that a process is a particular of any sort. With this in view, he responds to Helen Steward's position in which processes are particulars that change and grow, but are not continuants.

Crowther's central argument against the idea that processes change over time is that change itself is a process that must be grounded in the underlying nature of the substance that is changing. But the substance whose underlying nature is supposed to ground the changing of a process must be the very substance whose underlying nature grounds the process itself; there is no other substance in the area. So the change is attributable to that substance rather than to the process involving that substance. Crowther argues that when we might be inclined to say that the process of an arrow moving through the air is changing as the measure of that process—velocity—decreases, we would be better to say that only the arrow itself is changing—from having one velocity to having another. This allows him to hold on to the idea that there is no re-identifiable process particular but only time-occupying process stuff, chunks of which make up events.

Matthew Soteriou's contribution to this volume defends a conception of process like Crowther's conception, as temporally extended activity stuff, and applies it to experience.

¹⁷ In his 2006 he took this experientially conceived realization itself to be a process, something he suggested was very much akin to a continuant. In the way he now sets up the different categories there is no room made for such a conception of a continuant process.

He argues that the experience of something extended over time, like a performance of Bach's Goldberg Variations, must itself be extended over time. During intervals of that time you are experiencing intervals of that performance. So he rejects Michael Tye's (2009) 'one-experience' conception, according to which a single extended experience does not have temporal parts that are themselves experiences. Tye concedes that experiences may have temporal parts, but denies that these are themselves experiences. Soteriou regards this restriction as artificial and unmotivated. 'The perceptual accomplishment takes time, because one can only experience the whole performance by experiencing its successive parts successively.'

But Soteriou accepts that experience should not be construed as consisting of a succession of particular countable sub-experiences. Instead, a temporally extended experience consists of successive accumulation of temporally extended experience conceived of as stuff not as particular entities. Soteriou claims that experience cannot be broken down into indefinitely small distinct stretches of experience. There are what he calls 'experiential minima' such that there cannot occur experiences briefer than the extent of these minima and such that what is experienced during part of one experiential minimum is the same as what is experienced over the whole. But experience is not best thought of as the succession of discrete experiential minima conceived of as concrete particulars. Conceding the existence of experiential minima does not commit one to experiential atomism; and it is the massy conception of experiential process that makes space for this, according to Soteriou. The point of this talk of experiential minima is rather to give some content to the idea of the specious present constituting a thickish boundary between past and future.

Helen Steward's chapter concerns the metaphysics of conscious experience, and in particular, Matthew Soteriou's (2013) claim that conscious experience needs to be understood by reference to the metaphysical category of occurrent state. Brian O'Shaughnessy (2000) endorsed William James' (1890) conception of experience as a 'stream of consciousness', and Soteriou seeks to develop a conception of the metaphysics of experience that respects this idea. He sees the fact that you experience different stages of a changing scene at the very times that those stages take place in the changing scene as reason to favour some kind of processive view. But both Soteriou and Steward also seek to make space for the thought that experiencing something—even something dynamic—is a state a person is in. My being aware of a bird hopping about on a branch is a state that obtains for a period of time and is not composed of shorter experience parts. Soteriou's solution is to accept that the experience is a state, but to insist that it is a state that is constitutively bound up with occurrences—events or processes. It depends on the succession of stages that pass through consciousness, which at the same time depend for being conscious episodes on the fact that they constitute such a conscious state. He calls such states, 'occurrent states'. One thing that distinguishes them from other sorts of state is that they do not obtain for every moment in the interval over which they do obtain. This makes them like events, which do not occur at every moment in the interval over which they occur. Over an interval of time I may be

in the state of being consciously aware of the bird moving from one branch to another, but at a particular moment, say when the bird is still on the first branch, it is wrong, according to Soteriou, to say that that state is obtaining.

Steward objects that the notion of an occurrent state does not just sound odd; it is genuinely contradictory. While she sees no problem at all with the idea of a state having a mutual dependence with a series of occurrences, she does not accept that this means the state itself belongs to a special category that has something in common with the category of occurrents. In particular Steward insists that states obtain during every moment in the interval across which they obtain. In common with Galton and Crowther, Steward takes the nature of a process to depend on the way it occupies time. And, similarly, the nature of a state of being engaged in a process at some time depends not on what might be identified at that time but on what emerges over a period of time. She calls this position temporal holism. So I can be in the state of being engaged in watching a bird hopping from branch to branch in virtue of what happens over a period of time and still be in that very state at every instant within that period. So Steward argues that there is no need to elide the categories of process and state to explain the fact that there is some state and some process involved in experience.

Johanna Seibt attempts a systematic ontological investigation of process. She takes ontology to be concerned with characterizing the different categories of things that constitute truth-makers for our ordinary language, and distinguishes this from metaphysical concerns with the reality or otherwise of members of such categories. The way to characterize a domain of things with a distinct mode of being or occurrence is by means of a structure of categorical inferences that operates over that domain. The inferences should operate across different languages and the data from which one can establish such a structure of inferences concern the inferential practices of these different languages.

With this methodological approach to ontology, Seibt has constructed what she calls General Process Theory, a theory that makes space for non-countable individuals—in particular, masses, activities (processes), and developments—as well as countable ones. In total she can distinguish ten categories of such things. For Seibt, activities are like concrete three-dimensional particulars inasmuch as they endure through *recurring*—i.e. at different times the very same entity exists. But she does not treat such recurring activities as countable particulars. Seibt also distinguishes between different categories according to their dynamic telic structure. This allows her to distinguish between activities (going on) and what she calls developments (comings about)—e.g. between walking and walking to Aarhus. She takes the former and not the latter to be homomericous—i.e. such that individual parts of the activity have the same nature as the overall activity. And she criticizes views of processes as particulars (in particular those of Stout and Steward) that fail to account for this distinction.

Chris Mole makes a general, historically based case for treating *process* as more fundamental philosophically than *state* in the philosophy of mind. On the one hand we find philosophers like David Armstrong trying to understand the process of