

Priority Perdurantism

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Abstract: In this paper, I introduce a version of perdurantism called Priority Perdurantism, according to which perduring, four-dimensional objects are ontologically fundamental and the temporal parts of those objects are ontologically derivative, depending for their existence and their identity on the four-dimensional wholes of which they are parts. I argue that by switching the order of the priority relations this opens up new solutions to the too many thinkers problem and the personite problem – solutions that are more ontologically robust than standard maximality solutions. I then consider and respond to two initial objections to the view: that it no longer counts as a perdurantist theory and that it reintroduces the problem of temporary intrinsics. I conclude by offering two further advantages of Priority Perdurantism: that it is consistent with hunky time and with the existence of irreducibly temporally-extended actions, such as those pertaining to deliberative agency.

Keywords: Perdurantism; Temporal Parts; Causal Overdetermination; Personite Problem

I. Introduction

Perdurantism, the view according to which material objects persist through time by being spread out across time and possessing different temporal parts at different times, is often motivated by its ability to offer solutions to various puzzles about material objects, such as the problem of material constitution, the problem of symmetrical fission, the problem of metaphysical vagueness, and the problem of temporary intrinsics.¹ But perdurantism, especially perdurantism as applied to human persons, also gives rise to various puzzles of its own, such as the problem of too many thinkers and the personite problem. In this paper, I introduce a version of perdurantism called Priority Perdurantism, according to which perduring, four-dimensional objects are ontologically fundamental and the temporal parts of those objects are ontologically derivative, depending for their existence and their identity on the four-dimensional wholes of which they are parts. I argue that by switching the order of the priority relations, this opens up

¹ Perdurantists include Quine (1950), Lewis (1976; 1986), Armstrong (1980), Heller (1984; 1990), and Hudson (2001), among others. For a nice overview of perdurantist solutions to each of these puzzles, as well as a comprehensive list of references, see Hawley (2020).

new solutions to the too many thinkers problem and the personite problem – solutions that are more ontologically robust than standard maximality solutions. I then consider and respond to two initial objections to the view: that it no longer counts as a perdurantist theory and that it reintroduces the problem of temporary intrinsics. I conclude by offering two further advantages of Priority Perdurantism: that it is consistent with hunky time and with the existence of irreducibly temporally-extended actions, such as those pertaining to deliberative agency.

II. Two Puzzles About Material Objects

Let's begin with two familiar puzzles about material objects. Consider first the problem of causal overdetermination.² Suppose that there are baseballs in addition to the atoms that compose them. In such case, when a baseball is thrown through a window, what is it that breaks the window? Is it the baseball? Is it the atoms of which it is composed? Is it both the baseball and the atoms of which it is composed? If it is the baseball and not the atoms, we ought to wonder why the atoms fail to break the window. Couldn't the atoms break the window if they did not compose the baseball (say by composing some other thing or nothing at all)? What is it about being parts of the baseball, then, that prevents them from breaking the window? If it is the atoms and not the baseball that break the window, then we ought to wonder whether the baseball itself ever produces any effects. If things like baseballs do not themselves cause anything and all of the causal work is taken care of by their parts, perhaps we ought to wonder why we should believe that there are such things in the first place. But if both the baseball and the atoms of which it is composed break the window, then there are two things that break the window. And that seems like overkill. We have two things breaking the window when it seems that either one could have done so without the other (and by that I mean that the baseball could have broken the window

² Proponents of this argument include Merricks (2001) and Benovsky (2018). For discussion, see Korman (2016: Ch. 10) and Korman (2020).

had it been composed of other atoms, and the atoms could have broken the window had they composed something other than a baseball or nothing at all).

The issue to which the problem of causal overdetermination directs our attention is that if there exist composite wholes in addition to the parts that compose them, then such wholes would seem to be either epiphenomenal or in competition with their parts for each of the effects that they produce. There are, of course, several standard solutions to this puzzle. We can deny the existence of composite wholes: composite wholes are not really anything over and above their parts. We can deny the existence of the parts: “composite wholes” are really just large, extended simples. Or we can admit the existence of causal overdetermination in these sorts of cases and offer an explanation for why this sort of causal overdetermination is unproblematic.³

Consider next the following version of the problem of the many⁴: Suppose that there are cats in addition to the atoms that compose them. Now let’s consider some particular cat, Tibbles. It seems that whatever it is about Tibbles’s atoms that make it the case that they successfully compose a cat is going to be just as true about all of those atoms minus one (after all, it certainly seems that Tibbles could come to be composed of one fewer atom and be just fine). And so if the atoms that compose Tibbles compose a cat, then it seems that the atoms that compose Tibbles-minus-one should too. Thus, both Tibbles and Tibbles-minus-one are right now, both cats. Now, whatever it is about Tibbles-minus-one’s atoms that make it the case that they compose a cat is also going to be just as true about all of those atoms minus one more. And so if Tibbles-minus-one is a cat, then so is Tibbles-minus-two, and so on (up until the point at which the atoms remaining are insufficient to compose a cat). Hence, if we continue with this chain of

³ And there may be several ways of doing this. For a helpful overview of various replies which take this route, see Korman (2016: 194-202).

⁴ There have been several different formulations of the problem of the many over the past several decades. This is the “1,001 cats” formulation, first introduced by Peter Geach in his (1980). Other formulations are introduced or discussed in Unger (1980), Hudson (2001: Ch. 1), Korman (2016: Ch. 12) and Korman (2020).

reasoning, we find that there are not one but several cats wherever Tibbles is to be found. But that seems like too many cats.⁵

Here too there are several possible solutions. We can deny the existence of composite material objects like cats: cats are nothing more than the atoms that compose them. Or we can deny the existence of arbitrary undetached parts like Tibbles-minus-one: the only composite entity in the vicinity of Tibbles is Tibbles himself.⁶ Or we can admit the existence of arbitrary undetached parts but offer an explanation for why these entities nevertheless fail to count as rival cats.⁷

III. The Priority Solution

Patrick Toner⁸ and Ross Inman⁹ have both recently argued that the problematic assumption that gives rise to these and other similar puzzles about material objects is the assumption that if there are composite material objects, then they must nonetheless be ontologically posterior to their parts.¹⁰ On the standard, bottom-up conception of material objects, the atoms of which composite material objects are composed are ontologically fundamental, possessing their own independent existence and identity, whereas the composite material objects which possess those atoms as parts are ontologically derivative, owing their existence and their identity to the atoms of which they are composed. According to Toner and Inman, these puzzles can be resolved by flipping these priority relations, that is, by

⁵ Indeed, the problem is made even worse when we consider what would happen if Tibbles were to actually lose that one atom. Would Tibbles cease to exist? Would Tibble-minus-one cease to exist? Would both Tibbles and Tibble-minus-one come to share all of the same parts? This is known as the body-minus formulation of the problem. For discussion, see Heller (1984), Rea (1997), and Thornton (2019).

⁶ See, for example: van Inwagen (1981) and Olson (1995).

⁷ See, for example, Toner and Inman's strategy articulated below.

⁸ Toner (2008, 2010, 2011, 2012, 2014)

⁹ Inman (2017)

¹⁰ In addition to the problem of causal overdetermination and the problem of the many, Toner and Inman also discuss the problem of material constitution, the problem of metaphysical vagueness, the thinking parts problem, and the unity of consciousness argument. Here I focus on the first two.

understanding composite wholes to be ontologically prior to their parts and the parts to be ontologically posterior to the wholes which they compose.

To see how Toner and Inman's solution is supposed to work, let's begin by defining some of our terms. To say that some entity is ontologically prior to another is to say that the latter depends for its existence and its identity on the former: x is ontologically prior to y if and only if y depends for its existence and its identity on x . To put it another way, if x is ontologically prior to y , then *that* y is, *what* y is, and *which* y is are all determined by x . Next, to say that some entity is ontologically fundamental is to say that it depends for its existence and its identity on no other thing. And to say that some entity is ontologically derivative is to say that it depends for its existence and its identity on at least one other thing.

Now let's apply this terminology to better understand the current debate on the relationship between material objects and their parts. There are roughly three main camps in the current debate on this topic, which can be distinguished from one another by the sorts of material objects that they take to be ontologically fundamental and the sorts of material objects that they take to be ontologically derivative.¹¹ First, there is the bottom-up view, also known as priority microphysicalism, according to which those smallest objects at the very bottom of reality, the atoms, are ontologically fundamental and all other material objects composed of those atoms are ontologically derivative, owing their existence and identity to the atoms of which they are composed. Second, there is the top-down view, also known as priority monism, according to which that largest object at the very top of reality, the whole cosmos, is ontologically fundamental and all other material objects of which the whole is composed are derivative, owing their existence and identity to that whole. Third, there is the middleist view, also known as

¹¹ For a helpful overview of the debate between priority microphysicalism and priority monism, see Schaffer (2010). For a helpful overview of the debate between priority microphysicalism, priority monism, and priority macrophysicalism, see Inman (2017: Ch. 3) and Bernstein (2021).

priority macrophysicalism, according to which certain composite wholes at the middle of reality, say, familiar medium-sized composite material objects like cats, trees, and persons, are ontologically fundamental. On this last view, all material objects of which those familiar medium-sized objects are composed and all composite material objects which those medium-sized objects themselves compose are ontologically derivative, owing their existence and their identity to those familiar, medium-sized composite objects at the middle of reality.

Now let's turn to Toner and Inman. According to Toner and Inman's Neo-Aristotelian theory of material objects, there are certain composite material objects larger than atoms and smaller than the whole cosmos which are nonetheless fundamental, possessing their own independent existence and identity. Any of the smaller objects of which these fundamental objects are composed and any of the larger objects which those fundamental objects themselves compose are taken to be ontologically derivative, owing their existence and identity to those fundamental, composite entities. Toner and Inman's ontology, then, is a version of priority macrophysicalism, with two important qualifications. First, both Toner and Inman leave open the possibility that there may be some non-composite fundamental entities. The view is only that *some* fundamental material objects are composite. There could be other, non-composite material objects which are also fundamental, but, importantly, it will follow that necessarily none of these non-composite fundamental entities are proper parts of any of the composite fundamental entities.¹² Second, both Toner and Inman leave open the possibility that there may be some composite material objects that are merely derivative and so ontologically posterior to their parts. The view is only that *some* composite material objects are fundamental. Toner and Inman's view, then, is a mixed ontology, in which there are both simple and composite fundamental entities, and both fundamental and derivative composite material objects. Toner and Inman reserve the

¹² As dictated by Schaffer's "Tiling Constraint" (see Schaffer 2010: 38-42 for more on this).

term *substance* for those material objects, simple or composite, which are fundamental and the term *aggregate* for those composite material objects which are derivative.¹³ Substances, then, are those composite material objects that are ontologically prior to their parts and to any further composite wholes of which they themselves are parts, whereas aggregates are those composite material objects that are ontologically posterior to the fundamental material objects of which they are composed or to the larger, fundamental composite material objects of which they themselves are parts.

According to Toner and Inman, then, some composite material objects among us are ontologically posterior to their parts, whereas others are fundamental. But which are which and how can we tell? The basic idea is that some of the composite material objects among us are *emergent* entities. Such entities are emergent in that they possess properties and powers which are not merely a function of the properties and powers of their parts.¹⁴ But such entities are also emergent in another, more radical way. What Toner and Inman are proposing is that what makes something an emergent entity is not just that it is something *over and above* its parts but that it is something *ontologically prior* to its parts.¹⁵

I think that it is important to emphasize here what Toner and Inman are *not* saying. Toner and Inman are not claiming that emergent wholes or macrophysical substances are mereologically simple, completely lacking in material parts. Emergent wholes are wholes. They really do have parts. In some cases, the parts that these emergent wholes possess will look and behave much like other, “free-standing” composite or non-composite substances. However, as parts of larger, fundamental wholes, these parts are dependent entities, and so not substances in

¹³ Toner (2008: 286, 292-293); Toner (2010: 33, 34); Inman (2017: 97). Compare to Schaffer’s distinction between “integrated wholes” and “mere aggregates” (see Schaffer 2010: 47).

¹⁴ Toner (2008: 285); Inman (2017: 136-138).

¹⁵ The sort of emergence that Toner and Inman have in mind here, then, is not synchronic, but diachronic. Substances emerge not from the parts they currently possess but from the fusion or transformation of prior materials. See Humphreys (1997) and Humphreys (2016) for more on fusion or transformational accounts of emergence.

their own right. Each of these parts depends for its existence and its identity on the whole. Each part is such that it cannot exist and could not have existed on its own or as part of any other object.¹⁶

Having outlined the basic claims of Toner and Inman's Neo-Aristotelian theory of material objects, let's now turn to their solutions to the two puzzles introduced above. As Toner and Inman explain, what it means for something to be a substance is not only for it to depend for its existence and identity on no other thing. Substances are those entities to which the fundamental properties belong, including those powerful properties necessary for causal agency. Only substances possess non-redundant causal powers, and thus only substances can exercise non-redundant causal agency. In other words, only substances can act.¹⁷ Substances can possess different properties at different regions and at different times, and substances can act in, through, or by means of other derivative entities. But in such case it is still the substances that bear those properties and powers; it is the substances that are ultimately responsible for producing the effects we see in the world.

Now, since, according to Toner and Inman's view, composite material substances are ontologically fundamental, and because the material parts and any arbitrary subset of the material parts of a composite material substance are ontologically derivative, only composite material substances on this view can be said to possess their own properties and to exercise their own non-redundant causal powers. None of the parts of a composite material substance can do so

¹⁶ Toner and Inman distinguish here between "separable" and "inseparable" parts. Emergent substances are composed entirely of inseparable material parts; they possess no separable material parts. Aggregates, on the other hand, possess both separable and inseparable material parts. See Toner (2007: 288; 2010: 34, 35; 2011: 67, 68) and Inman (2017: 93, 101) for more on this. Importantly, to say that each part is such that it cannot exist and could not have existed on its own or as part of any other object is not to say that the whole cannot exist and could not have existed without those particular parts. The relevant relations of dependence run from whole to part, not part to whole. As a result, it is consistent with Toner and Inman's proposal that emergent substances are such that they can come to possess and could have always possessed different parts than the particular ones that they do.

¹⁷ Toner (2008: 286, 289, 293-294; 2010: 34; 2011: 68, 72); Inman (2017: 199-201, 226-227).

precisely because of their derivative ontological status. So, when a composite material substance, say, a tiger, crashes through a window, it is the composite material substance, the tiger, that breaks the window. The tiger can be said to break the window by means of some of its parts, but strictly speaking it is the tiger, the composite material substance that acts. Thus, composite material substances do not compete with their material parts for any actions that they perform or any effects that they produce, for actions and effects are always attributed to that which is fundamental. And on this picture, only the composite material substance is fundamental.¹⁸

Toner and Inman's priority solution also solves the problem of the many in at least two ways. First, because each and every part of a composite material object is ontologically derivative, owing its existence and identity to the whole of which it is a part, none of the "Tibbles-minuses" found within Tibbles are substances. As we've seen, substances are those entities which possess their own independent existence and identity. Now, a cat is, by definition, a feline substance. And so since these Tibbles-minuses do not possess their own independent

¹⁸ In Inman's own words: "Substantial Priority construes composite substances themselves – the bearers of the perfectly natural properties – as being metaphysically prior to their proper parts such that they serve to ground the existence and identity of their proper parts. As such, the causal activity of the proper parts of a fundamental substance do not threaten to render the causal activity of the fundamental substance redundant (and thus susceptible to elimination) precisely because the identity and existence of such parts depend on the substantial whole in question. As mereological wholes which lack bearers of non-redundant causal powers as proper parts, fundamental substances in no way compete or rival their parts for the causal production of [their effects]...endorsing Substantial Priority for ordinary substances (and hence rejecting Part-Priority for such wholes) offers a solution to the Argument from Causal Overdetermination that preserves Existence for a host of scientifically serious composite objects" (Inman (2017: 200-201)). See also Toner (2008: 286), Toner (2011:72), Toner (2012: 212), and Toner (2014: 83). As both Toner and Inman admit, their solution only works for composite substances. It will not work for composite aggregates. (That's why I've switched from baseballs to tigers here. I'm assuming tigers are emergent substances.) In the case of aggregates, both Toner and Inman advocate a reductionist approach: composite aggregates do not possess any fundamental properties or non-redundant causal powers of their own. All of the fundamental properties and non-redundant causal powers in a composite aggregate are possessed by its parts. As a result, any effects produced by composite aggregates are really produced by the smaller substances of which they are composed. So says Toner: "I do not consider desks or chairs or baseballs to be substances, because I believe none of these objects has non-redundant causal powers. That is, I believe everything these things do is fully explainable in a bottom-up way" (Toner (2008: 286)). Toner and Inman will need some other way, then, to avoid having to deny the existence of such things.

existence and identity, they are not substances. And since they are not substances, they are not cats.¹⁹

Second, because none of the individual material parts or any of the arbitrary subsets of the material parts of a composite material object can be said to possess or exercise any of their own non-redundant causal powers, none of the “Tibbles-minuses” found within Tibbles can be said to purr, chase mice, or perform any other actions characteristic of cats. Indeed, these Tibbles-minuses do not even have the power or capacity to perform any of these actions, since each of the powers or capacities present within a Tibbles-minus is a power or capacity that belongs to the composite material substance of which it is a part. Plausibly, only something which possesses the power or capacity to perform actions characteristic of cats, something which in some sense can perform such actions, is a cat. And so none of these Tibbles-minuses is a cat. Only Tibbles, the fundamental, composite material substance can be said to perform any of the actions performed in, through, or by means of its material parts. And so only Tibbles is a cat.²⁰

IV. Two Puzzles for Perduring, Four-Dimensional Objects

Shifting to a perdurantist theory of material objects, according to which material objects are spread out across time and possess different temporal parts at different times, opens up new

¹⁹ Once again, in Inman’s own words: “While there are a multiplicity of Socrates-constituting aggregates of simples in the region at which Socrates is located, Socrates is the sole human animal that each of them constitutes...Suppose...that Socrates, like every living organism, is a fundamental substance understood along the lines of a grounding whole. As such, no distinct concrete thing grounds Socrates, and Socrates is the total ground for each of this proper parts. That is, which objects the proper parts of Socrates are involve exclusive reference to Socrates as their ground. Since Socrates lacks fundamental substances as parts at t... SOC-minus does not compose a rival substance at t (Socrates-minus). The proponent of such a fundamental mereology pushes back on the underlying assumption that generates the multiplicity of rival candidates occupying Socrates’s chair at t: that substances like Socrates can have other distinct substances like Socrates-minus as proper parts. If the bits of matter in SOC compose a fundamental substance at t, Socrates, then those bits are what they are in virtue of the substance of which they are a part. By extension, since the bits of matter in SOC-minus are parts of the bits that compose Socrates at t (SOC), they are likewise grounded in Socrates and thereby derivative. SOC-minus, then, is not an equally good candidate to compose a human organism at t precisely because the identities of each of its elements are already totally and exclusively dependent on a distinct fundamental substance at t, Socrates” (Inman (2017: 190-191). See also Inman (2017: 162). Here too, Toner and Inman’s solution only works for composite substances. It will not work for composite aggregates.

²⁰ See, once again, Toner (2011: 72). See also Toner (2008: 292) and Toner (2010: 43-44).

solutions to some of the most perplexing puzzles about material objects. But in so doing, it also gives rise to temporal analogues of some of these puzzles, including the two puzzles discussed above. For perdurantism about human persons, for example, the problem of causal overdetermination becomes the problem of too many thinkers and the problem of the many becomes the personite problem.

Consider first perdurantism's problem of too many thinkers.²¹ Suppose that there are perduring, four-dimensional objects in addition to the temporal parts of which they are composed. For example, suppose that there are perduring persons in addition to the person stages of which they are composed. In such case, when a person thinks about going to the store, what is it that is doing that person's thinking about going to the store? Is it just the perduring person? Is it just the person stage during which that thought occurs? Is it both the person and that person stage? The worry about the first option is that it is part of the perdurantist program that four-dimensional objects possess their properties and perform their actions by virtue of possessing temporal parts which possess those properties or perform those actions at a particular time.²² The worry about the second option is that this would mean that all of the causal work is really being done by the person stages. The four-dimensional, perduring person is not itself doing anything. It is causally irrelevant. And if four-dimensional, perduring objects turn out to be causally irrelevant, we ought to wonder why we should believe that there are four-dimensional, perduring objects in addition to the temporal stages that compose them in the first place. But it is part of the perdurantist program that we are four-dimensional perduring persons. And so if we

²¹ Proponents of this sort of objection to perdurantism include Schechtman (1996: 57-60), Zimmerman (2003), Stone (2007), Olson (2007: 122-125), and Rimell (2018).

²² "A persisting thing *perdures*. It consists of temporal parts, or stages, different ones at different times, which differ in their intrinsic properties. When I sit and then stand, bent stages are followed by straight stages. Each stage has its shape *simpliciter*. Shape is truly intrinsic. To be sure, my shapes belong in the first instance to my stages, and in a derivative, relational way to the whole of me. Persisting thing *x* is bent at time *t* iff some stage of *x* is at *t* and is bent" (Lewis 1988: 66). For a helpful discussion of this point, see Rimell (2018).

are forced to deny the existence of such things, then this may also force us to deny our own existence. Finally, if we go for the third option, and say that it is both the person and the person stage who are thinking about going to the store, then there are two things that are doing the person's thinking about going to the store: both the perduring, four-dimensional person and the person stage during which that thought occurs. But that seems like too many things doing the person's thinking about going to the store.

The issue to which this problem directs our attention is that if there are perduring four-dimensional objects in addition to the temporal stages that compose them, then such objects would seem to be either epiphenomenal or in competition with their temporal parts for any actions that they perform or any effects that they produce. There are, as before, several possible solutions to this problem. We can deny the existence of perduring, four-dimensional objects.²³ We can deny the existence of their parts.²⁴ Or we can admit that there is a kind of causal overdetermination here but offer an explanation for why this sort of causal overdetermination is unproblematic.

Now let's consider perdurantism's personite problem.²⁵ Suppose there are perduring, four-dimensional objects in addition to the temporal stages that compose them. For example, suppose that there are perduring persons in addition to the person stages of which they are composed. Now let's consider some particular perduring person, you. Whatever it is about the person stages of which you are composed that make it the case that they compose a person is going to be just as true about all of those person stages minus one (after all it certainly seems that, looking at the whole of your life, you yourself could have either come into existence a

²³ Or at least deny that ordinary material objects are such things, as stage-theorists do (see, for example: Sider (2001) and Hawley (2001)).

²⁴ And so understand four-dimensional objects as temporally-extended simples. I discuss this option further below.

²⁵ The personite problem was first introduced by Johnston in his (2016) and (2017). But earlier iterations were also discussed in Taylor (2013) and Olson (2010).

fraction of a second earlier or lived a fraction of a second longer than you actually did). And so if the person stages that compose you compose a person, then it seems that the person stages that compose you-minus-one should too. Thus, both you and you-minus-one are right now, both persons. Now, whatever it is about the person stages of which you-minus-one is composed that make it the case that they compose a person is also going to be just as true about all of those person stages minus one more. And so if you-minus-one is a person, then so is you-minus-two, and so on (up until the point at which the person stages remaining are insufficient to compose a person). Hence, if we continue with this chain of reasoning, we find that there are not one but several persons sitting in your chair right now. But that seems like too many persons sitting in your chair.

Here too there are several possible solutions. We can deny the existence of perduring, four-dimensional objects.²⁶ Or we can deny the existence of arbitrary fusions of temporal parts like personites. Or we can admit the existence of arbitrary fusions of temporal parts like personites but offer an explanation for why these entities nevertheless fail to count as rival persons.²⁷

V. Priority Perdurantism

I would like to propose that these perdurantist puzzles, like their three-dimensional counterparts, arise only if we assume that the priority relations between temporal parts and the four-dimensional perduring objects that they compose run from part to whole. As a result, perdurantists have available to them a solution to their own puzzles about four-dimensional objects that is similar in structure to the solution offered by Toner and Inman above. I call this

²⁶ Or at least that persons are such things (see, for example: Kaiserman (2019)).

²⁷ For discussion of the second two options, see Johnston (2016), Johnston (2017), and Eklund (2019).

solution “Priority Perdurantism”.²⁸ Priority Perdurantism solves the second two puzzles about four-dimensional objects by understanding four-dimensional objects to be ontologically prior to their temporal parts in much the same way that Toner and Inman understand composite material substances to be ontologically prior to their material parts.

To say that a perduring, four-dimensional object is ontologically prior to its temporal parts is to say that each of the temporal parts of the perduring, four-dimensional object depends for its existence and its identity on the whole of which it is a part. Each temporal part is such that it cannot exist and could not have existed on its own or as part of any other perduring, four-dimensional object.²⁹ Note that this is the reverse of standard, bottom-up perdurantism. Typically, temporal parts are seen as ontologically prior to the perduring, four-dimensional wholes that they compose. Temporal parts are seen as possessing their own independent existence and identity, and four-dimensional wholes are seen as owing their existence and identity to the existence and identity of their temporal parts. As with composite material objects, it is typically held that if there are perduring, four-dimensional objects in addition to the temporal stages of which they are composed, then these are merely derivative entities. It is the temporal parts that are fundamental. Here is how Priority Perdurantism might solve our two perdurantist puzzles: certain perduring, four-dimensional objects are ontologically fundamental, possessing their own independent existence and identity. Call such entities “perduring substances”. Every part of a perduring substance, which importantly includes any individual temporal part and any arbitrary subset of its temporal parts, is ontologically derivative, owing its existence and its

²⁸ Something like the view that I propose here has also been proposed by McCall (1994: 211-214), Buonomo (2018), and Pemberton (forthcoming), and briefly discussed but rejected by Miller (2006), Wasserman (2016), and Taylor (2020).

²⁹ Here, too, to say that each temporal part is such that it cannot exist and could not have existed on its own or as part of any other perduring, four-dimensional object is not to say that the perduring, four-dimensional object itself cannot exist and could not have existed without those particular temporal parts. The relevant relations of dependence run from whole to part, not part to whole. As a result, it is consistent with my proposal that perduring, four-dimensional objects are such that they could have possessed different temporal parts than the particular ones that they do.

identity to the whole of which it is a part. Now, as we said earlier, substances are those entities to which the fundamental properties belong, including those powerful properties necessary for causal agency. Only substances possess non-redundant causal powers, and thus only substances can exercise non-redundant causal agency. In other words, only substances can act. Substances can possess different properties at different regions or at different times, and substances can act in, through, or by means of other derivative entities. But in such case it is still the substances that bear those properties and powers; it is the substances that are ultimately responsible for producing the effects we see in the world.

Applied to perduring substances, it will follow from this that none of the individual temporal parts or any of the arbitrary subsets of the temporal parts of a perduring substance can be said to act. They are just not the right sort of thing to do so. So when I think about going to the store, it is me, the perduring, four-dimensional whole that does the thinking. I can be said to think in, at, through, or by means of some particular temporal part that I possess, but, strictly speaking, it is me that acts. Thus, I do not compete with my temporal parts for any actions that I perform or any effects that I produce, for actions and effects are always attributed to that which is fundamental. And on this picture, I, the perduring substance, am the only fundamental entity in my vicinity.

Priority Perdurantism also solves the personite problem in the same two ways that Toner and Inman's priority solution solved the problem of the many. First, because every part of a perduring substance is ontologically derivative, owing its existence and identity to the whole of which it is a part, none of the personites found within me are substances. A substance is, by definition, something possessing its own independent existence and identity. And a person is,

let's say, an individual substance of a rational nature.³⁰ And so since these personites do not possess their own independent existence and identity, they are not substances. And since they are not substances, they are not persons.

Second, because none of the individual temporal parts or any of the arbitrary subsets of the temporal parts of a perduring substance can be said to act, then none of the personites found within me can be said to think, reflect, will, or perform any other actions characteristic of persons. Indeed, these personites do not even have the power or capacity to perform any of these actions, since each of the powers or capacities present within a personite is a power or capacity that belongs to the perduring, four-dimensional whole alone. Plausibly, only something which possesses the capacity to perform actions characteristic of persons, something which in some sense can perform such actions, is a person. And so none of these personites is a person. Only I, the fundamental, perduring, four-dimensional object can be said to perform any of the actions performed in, through, or by means of my temporal parts. And so only I am a person.³¹

The priority solution to the personite problem bears some resemblance to the maximality solution, according to which personhood or consciousness is a maximal property, belonging only to the largest entity in the vicinity that can be said to possess it.³² But it is importantly different. What makes any of the personites ineligible for personhood and what prevents them from performing any actions characteristic of persons is not the fact that there happen to be further temporal parts either before or after them to which they are related. Rather, what does so is the fact that each personite is itself a dependent, derivative entity. And that is an intrinsic, not an

³⁰ This is the classical Boethian definition. We might prefer the Lockean definition which makes no reference to substancehood. But if substances are just those entities that possess their own properties and can perform their own actions, then it certainly seems like Locke (and we) ought to say that persons are substances, at least in that sense.

³¹ Importantly, whether or not they count as persons in any sense, the real point is that, on this picture, personites cannot act and do not possess any of the powers or capacities required to satisfy the conditions for the sort of moral status which persons enjoy. And so none of the ethical concerns that might be introduced by granting the existence of personites arise.

³² For discussion, see Johnston (2016); Johnston (2017).

extrinsic, fact about them. Each personite is essentially such that it cannot exist and could not have existed on its own or as part of any other perduring four-dimensional object.

VI. Two Worries for Priority Perdurantism

Perdurantism is often formulated as the view according to which material objects are spread out across time and persist by virtue of possessing different temporal parts at different times. One worry for the view that I have just described is that it will no longer count as a version of perdurantism. The worry is that if perduring substances are fundamental and their temporal parts derivative, then all explanations of existence and identity run from whole to part, not part to whole. As we have seen, on Priority Perdurantism, it is the perduring, four-dimensional whole which is the primary possessor of the properties found in its temporal parts and the primary agent of the actions performed in or at those parts. But if the order of explanation runs from the whole to the parts, and not from the parts to the whole, how can the whole be said to persist *by virtue of* possessing different temporal parts at different times? How can the whole be said to be present at a particular time *by virtue of* having a temporal part that is present at that time if every one of the properties attributed to that temporal part must be attributed primarily, and in the first place, to the whole?

This worry raises important questions about how we should define perdurantism and how we should distinguish between perdurantism and endurantism. There are at least three proposals in the literature for how to do this.³³ First, according to locational formulations of perdurantism, perdurantism is the view according to which material objects are temporally extended and so exactly located not at any single moment in time, nor multiply-located at several moments in

³³ Locational and mereological formulations are contrasted in Parsons (2006), Donnelly (2011), Donnelly (2013), Gilmore (2018), and Hawley (2020). Mereological and explanatory formulations are contrasted in Wasserman (2016).

time, but singly and exactly located at some particular four-dimensional spatio-temporal region.³⁴ Endurantism, on this formulation, is the view according to which material objects are either exactly located at some particular time or multiply-located across time, exactly located at every moment at which they are present. The second way of defining perdurantism is to formulate the view mereologically. According to mereological formulations of perdurantism, perdurantism is the view according to which material objects are temporally-extended composite wholes, possessing different temporal parts at different times. Endurantism, on this formulation, is the view according to which material objects do not possess any temporal parts and so are “wholly present” at every moment at which they exist. The third way of defining perdurantism is to formulate the view as an explanatory thesis. According to explanatory formulations of perdurantism, perdurantism is the view according to which material objects are temporally-extended composite wholes which persist through time *by virtue of* possessing different temporal parts at different times. According to this last formulation, endurantism includes any view that denies that material objects persist by virtue of possessing different temporal parts at different times.

Notice how each of these formulations is stronger than the one that comes before. The first formulation simply specifies the way in which objects are located in time: either by being extended across time or by being multiply-located at various times. The second formulation, built on the first, introduces the qualification that perduring entities are to be understood as temporally extended *and* as composed of temporal parts. Thus, the second formulation excludes not only “sweeping” and multiple-location endurantist views but also any view according to

³⁴ To say that some entity, *x*, is exactly located at some region, *r*, is to say that *x* is both *entirely* and *pervasively* located at *r*. To say that *x* is entirely located at *r* is to say that every region outside of *r* is completely free of *x*. To say that *x* is pervasively located at *r* is to say that there is no subregion of *r* which is free of *x*. To say that *x* is multiply-located, then, is to say that there are several regions at which *x* is exactly located (see, for example, Parsons (2006)).

which material objects are said to “span”, “terdure”, or “transdure” through time as temporally-extended simples.³⁵ The third formulation, built on the second, specifies not only that material objects are temporally extended and possess different temporal parts at different times but also that these temporal parts, and the relations they bear to one another, *explain* the material object’s persistence through time: a material object is present at a particular time *because* one of its temporal parts or stages is present at that time, and the material object is present at multiple times *because* it is composed of several temporal parts or stages, each of which is present at a different time.

Now, if we define perdurantism in either of the first two ways, then Priority Perdurantism is clearly a perdurantist theory and clearly not an endurantist theory. For, according to Priority Perdurantism, perduring substances are indeed temporally-extended composite wholes, which are exactly located not at any single moment in time, nor multiply-located at several moments in time, but singly and exactly located at some particular four-dimensional spatio-temporal region. They also possess different temporal parts at different times. However, if we define perdurantism in the third way, then Priority Perdurantism will fail to count as a perdurantist theory. And this is so because, according to Priority Perdurantism, while perduring substances do possess different temporal parts at different times, and so are not “wholly present” at any time, it is not the case that they persist through time *by virtue of* these parts. For Priority Perdurantism, to “persist” through time is simply to be temporally extended, and temporal extension is understood to be a basic, fundamental fact about material objects. Instead of saying that a perduring, four-dimensional object is present at a particular time and possesses various properties at that time because one of its parts is present and possesses those properties at that time, Priority

³⁵ See, for example: Hudson (2005: 101), Parsons (2000), Miller (2009), and Daniels (2019). Hudson uses the term “span”, Miller the term “terdure”, and Daniels the term “transdure”.

Perdurantism insists that the parts of perduring, four-dimensional objects are present at particular times because the whole bears certain relations to each of those times. In this way, Priority Perdurantism does not provide any kind of metaphysical explanation for the persistence of material objects. It does not explain *how* material objects persist, if to explain how they do so is to reduce their persistence to some more fundamental facts about their parts. Crucially, Priority Perdurantism takes temporal extension to be a fundamental fact about composite material substances themselves, not requiring any further explanation. Priority Perdurantism can be understood as outlining the mode, manner, or way in which objects persist through time: they are temporally extended and possess distinct temporal parts at different times. But these facts are not explanatorily more basic. Persistence is taken to be a fundamental feature of composite material substances.³⁶

So, is Priority Perdurantism a perdurantist theory? According to some formulations, yes. But according to at least one formulation, no. It certainly has more features in common with other forms of perdurantism than it does with any form of endurantism, and so for that reason I am considering it a version of perdurantism. But perhaps it is best classified as neither a perdurantist nor an endurantist theory, but an alternative to both, similar to the alternative, temporally-extended simple view mentioned above.

Even so, I think that there are substantive metaphysical differences between Priority Perdurantism and the other views on offer. Priority Perdurantism denies that perduring substances are temporally mereologically simple, completely lacking in temporal parts. Perduring substances are genuine composite wholes. They really do have parts. When we look at a perduring substance stretched out in time, there really are isolable parts or portions that we can accurately identify, distinguish, and quantify over. We can, from the eternal perspective, point to

³⁶ Thanks to T. Q. George for helping me to see this point more clearly.

some earlier part of the perduring substance and say truly that some of it is over here (pointing to some early temporal region) and that some of it is over here (pointing to some later temporal region). So there is a real ontological difference between Priority Perdurantism, multi-location endurantism, and the temporally-extended simple view mentioned above. Priority Perdurantism posits the existence of a kind of entity (temporal part) and attributes to certain ordinary material objects a property (temporal complexity) which are denied by the two views just mentioned, but which Priority Perdurantism shares with other, standard varieties of perdurantism. The question, then, is whether these additional ontological commitments provide Priority Perdurantism with any advantages over its main competitors.³⁷

A more serious worry for Priority Perdurantism is that by switching the order of the priority relations that hold between perduring, four-dimensional objects and their parts, and by arguing that all fundamental properties and non-redundant causal powers are possessed by the whole and not the parts, Priority Perdurantism reintroduces the problem of temporary intrinsics. To see the force of this objection, let's begin with a rough formulation of the problem of temporary intrinsics.³⁸

1. In the morning the desk is entirely red.

³⁷ It might be helpful to compare the debate that I am outlining here to the ongoing debate between priority microphysicalists, priority monists, and existence monists. Standard perdurantism is analogous to priority microphysicalism, in that it recognizes the existence of both the parts and the whole while understanding the parts as ontologically prior the whole. Priority perdurantism is analogous to priority monism, in that it recognizes the existence of both the parts and the whole while understanding the whole as ontologically prior to the parts. The temporally-extended simple view is analogous to existence monism, in that it recognizes the existence of the whole but denies the existence of the parts. In defense of priority monism, Schaffer argues that his view is ontologically, and not just semantically, distinct from existence monism: the relevant dependence relations are meant to hold between genuinely numerically distinct entities. As he puts it, “this doctrine *presupposes* that the many proper parts exist, for the whole to be prior to” (Schaffer (2018)). Schaffer argues, furthermore, that recognizing the existence of the parts provides various theoretical advantages for priority monism over existence monism (see Schaffer (2012) and Schaffer (2018)). Similarly, I would argue that priority perdurantism is ontologically, and not just semantically, distinct from the temporally-extended simple view (it too presupposes that there are distinct relata for the relevant dependence relations to relate), and that recognizing the existence of temporal parts may offer certain theoretical advantages for priority perdurantism over the temporally-extended simple view (see, for example, the discussion in footnote 44 below).

³⁸ The central text here is Lewis (1986: 203-204), later reiterated in Lewis (1988) and Lewis (2002). Helpful discussions include Wasserman (2006) and Brower (2010).

2. And so it is true that the desk is entirely red.
3. In the evening, the desk is entirely blue.
4. And so it is true that the desk is entirely blue.
5. Hence, it follows that the desk is both entirely red and entirely blue.
6. But nothing can be both entirely red and entirely blue.

As with the other puzzles we have explored in this essay, there are several possible solutions to this problem as well. We can deny one of the color attributions by stipulating that only attributions concerning that which is presently the case are true³⁹. We can relativize property attributions to particular times.⁴⁰ We can introduce multiple modes of property possession.⁴¹ Or we can stipulate that only part of the desk is entirely red (the temporal part during which it is red) and only part of it is entirely blue (the temporal part during which it is blue).⁴² Perdurantism, then, is typically taken to provide a solution to the problem of temporary intrinsics by introducing temporal parts of objects, which allows them to deny that there is any one thing that is both entirely red and entirely blue. What perdurantists will say is that one of the object's temporal parts is entirely red and another is entirely blue. In such case, the desk really is both red and blue, but it possesses each of these qualities derivatively, by possessing certain temporal parts which possess those qualities in the primary sense.

The worry for Priority Perdurantism here is that once it reverses the order of explanation for property attributions from part to whole to whole to part, it can no longer make use of the temporal parts strategy for resolving the problem of temporary intrinsics. And if it can no longer

³⁹ This is the presentist solution, according to which only the present time exists. Proponents include Merricks (1994; 1995; 1999), Zimmerman (1998), Hinchcliff (1996), and Fiocco (2010)

⁴⁰ See, for example, Mellor (1981: 111-114) and van Inwagen (1990a).

⁴¹ See, for example: Johnston (1987) and Haslanger (1989).

⁴² This is the strategy that Lewis favors. That the other strategies fail to preserve the intrinsicality of property possession is typically taken to be one of the main reasons for shifting to a perdurantist view of material objects.

make use of this strategy for resolving the problem of temporary intrinsics, then it loses one of the main motivations for accepting perdurantism in the first place.

While, as I will explain below, there is something importantly right about this objection, there is still a sense in which priority perdurantists can make use of the temporal parts strategy for resolving the problem of temporary intrinsics. For, even though, on Priority Perdurantism, it is the perduring, four-dimensional whole which possesses the properties of its temporal parts in the strict and proper sense, the fact that the perduring four-dimensional whole possesses distinct temporal parts still allows it to avoid paradox. Consider a spatial analogue to the problem of temporary intrinsics:

1. The left side of the desk is entirely red.
2. And so it is true that the desk is entirely red.
3. The right side of the desk is entirely blue.
4. And so it is true that the desk is entirely blue.
5. Hence, it follows that the desk is both entirely red and entirely blue.
6. But nothing can be both entirely red and entirely blue.

The main reason why this version of the argument is so obviously fallacious is because of the breakdown between premises 1 and 2 and the similar breakdown between premises 3 and 4. Just because one side of the desk is entirely red or entirely blue does not mean that the desk is entirely red or entirely blue. The desk is partly red and partly blue. Or, to put it another way, the desk is red *over here* (pointing to the left side of the desk) and blue *over there* (pointing to the right side). Priority perdurantists can make a similar move for perduring substances and their temporal parts. The desk is partly red in that it has a temporal part *at which* it is red and it is partly blue in that it has a temporal part *at which* it is blue. Or, to put it another way, the desk is

red *over here* (pointing, from the eternal perspective, to one of its earlier temporal parts) and blue *over there* (pointing, from the eternal perspective, to one of its later temporal parts). Notice that it is not necessary to attribute these properties directly to the parts in order for this solution to work. I need not say that my feet are touching the floor in order to explain how I can be both touching the floor and not touching the floor at the same time. I need only explain that I am touching the floor in, at, or with my feet whereas I am not touching the floor in, at, or with my hands. And so I do not think that flipping the priority relations between perduring, four-dimensional objects and their temporal parts means that those parts play no role in helping Priority Perdurantism to resolve the problem of temporary intrinsics.

With that said, there is still something of a worry here. Since, according to Priority Perdurantism, the temporal parts of perduring substances do not themselves possess either of the relevant properties, there remains one subject that possesses both of the contradictory properties: the perduring, four-dimensional whole. Sure, the Priority Perdurantist can relativize those contradictory properties to different temporal parts at which, or in which, or through which the perduring, four-dimensional whole possesses each one, but ultimately, since it is not the temporal parts themselves that possess those properties, this still requires relativizing those properties to different “regions” within the perduring, four-dimensional whole or different times at which the perduring, four-dimensional whole possesses those properties. And so it seems that the Priority Perdurantist has indeed been forced to give up the notion of possessing a property *simpliciter* and has had to resort to one of the relativizing solutions to the problem of temporary intrinsics mentioned above. And if that is the case, then Priority Perdurantism has indeed given up one of the main motivations for accepting perdurantism.⁴³

⁴³ I thank an anonymous referee for pressing this point.

Here I think the Priority Perdurantist has three options. First, she can insist that the temporal parts possessed by the perduring, four-dimensional whole really are playing a key role in Priority Perdurantism's solution to the problem of temporary intrinsics, that the solution is not simply leaning on the relativization of those properties to times. Alternatively, she can admit that the Priority Perdurantist's solution to the problem of temporary intrinsics does collapse into one of the relativization strategies also available to the endurantist, and so admit that the problem of temporary intrinsics gives the endurantist no special reason to prefer Priority Perdurantism. In such case, the Priority Perdurantist could still argue that there are other reasons to prefer a Priority Perdurantist theory of material objects. For example, the more modest claim that material objects are temporally extended and possess different temporal parts at different times still allows Priority Perdurantism to solve several of the other puzzles about material objects mentioned above in ways not available to the endurantist.⁴⁴ Moreover, many philosophers find the notion of an object's being "wholly present" or multiply-located at multiple times to be problematic for reasons beyond the problem of temporary intrinsics.⁴⁵ In that case, Priority Perdurantism may have that advantage over endurantism, since it relies on no such notion.

There is, however, another, and, in my view, more promising, way for the priority perdurantist to respond to this worry. There is one solution to the problem of temporary intrinsics

⁴⁴ So, for example, consider the problem of material constitution. A statue and the lump of clay of which it is constituted would appear to be numerically distinct material objects, since it is possible for one to exist without the other. And yet they appear to perfectly coincide, to share every one of their parts. But how could two numerically distinct material objects share every one of their parts and yet differ in their modal properties? For the perdurantist, the statue and the lump of clay of which it is constituted do not perfectly coincide, they do not share every one of their parts. On the contrary, understood as perduring, four-dimensional objects, the statue and the lump of clay are composed of different temporal parts (as long as there is some point in time at which one of them exists without the other). Indeed, we can understand the statue as a temporal part, or some subset of temporal parts, of the lump of clay. And thus the relationship between the two is made significantly less mysterious and significantly less problematic. (See, for example, Hawley (2020)). Notice that while this perdurantist solution to the problem of material constitution relies on an understanding of material objects as composed of temporal parts, it does not obviously depend on any particular understanding of the priority relations that might hold between those temporal parts and the perduring, four-dimensional objects that they compose. And so this solution is available to both the standard perdurantist and the priority perdurantist, but not to the endurantist.

⁴⁵ See, for example, Barker and Dowe (2003) and Barker and Dowe (2005).

of which Priority Perdurantism can make use, which is not obviously available to either endurantist or standard perdurantist views. This is the distributional property solution.⁴⁶ Distributional properties are those features of an object that it possesses not at any single place or time but across a spatial or temporal region. Distributional properties, then, are both irreducibly-extended and heterogeneous or non-uniform. There are at least two possible types of distributional properties: spatial distributional properties and temporal distributional properties. Spatial distributional properties are irreducibly spatially-extended, in that they require that their bearers occupy a certain extended region of space, and they are heterogeneous or non-uniform in that they require an uneven distribution of qualities or features across that region of space. Spatial distributional properties will include such properties as “being polka-dotted” or “being checkered” or “being hot at one end and cold at the other”. It is tempting to think that spatial distributional properties are nothing more than non-distributional properties bearing certain relations to one another, and that to possess a spatial distributional property is to possess proper parts which possess those non-distributional properties and bear the relevant relations to one another. But this is not so obvious. If spatially-extended simples are possible, and if spatially-extended simples can exhibit qualitative variation across their spatial dimensions, then they would do so by means of possessing spatial distributional properties. And these spatial distributional properties could not be reduced to the non-distributional properties of any of the parts of those simples, since, as simples, they have no parts.

The relevance of distributional properties for the problem of temporary intrinsics becomes clear when we consider the possibility of temporal distributional properties. These

⁴⁶ See, especially, Parsons (2000) and Parsons (2004). Schaffer (2010) brings in spatial distributional properties to account for the qualitative heterogeneity of the cosmos. Cameron (2011, 2015) brings in temporal distributional properties to help provide presentists and moving spotlight theorists with present truthmakers for past and future truths.

properties would be irreducibly-temporally-extended, requiring that their bearers occupy a certain extended temporal region, they would be heterogeneous or non-uniform in that they would require an uneven distribution of qualities or features across the duration of the bearer's existence, but they would also be irreducible to any non-distributional properties possessed by the temporal parts of their bearers. Indeed, if temporally-extended simples are possible, and if temporally-extended simples can exhibit qualitative variation across their temporal dimensions, then they would do so by means of possessing these sorts of properties. In the case of the problem of temporary intrinsics, the priority perdurantist could argue that the best way to resolve the paradox is to see the apparently contradictory properties possessed by one and the same object as referring to a single temporal distributional property. The desk does not possess the contradictory properties of being entirely red and being entirely blue. It possesses the temporal distributional property of "beginning red and ending blue". No contradiction. No paradox. Now, granted, this solution to the problem of temporary intrinsics carries a lot of baggage. It depends on there being such properties as distributional properties and on those properties being irreducible to smaller or shorter non-distributional properties. And both of these are controversial claims. But notice that this is a solution which cannot also be utilized by the endurantist, for it requires that the bearers of these properties be temporally-extended. And so if this turns out to be a promising strategy for solving the problem of temporary intrinsics, then priority perdurantists would have that advantage over endurantism.⁴⁷

⁴⁷ Cameron (2011, 2015) thinks that this strategy is also available to the endurantist (and even the presentist endurantist). Here's an argument to the contrary: distributional properties are irreducibly-extended. For an object to possess a distributional property is for that object to possess a property not at any single place or time but across a spatial or temporal region. As a result, it seems that there are several things that need to be the case for an object to successfully possess a distributional property. First, in order for a property to be distributed across a spatial or temporal region, it seems that there must exist spatial or temporal regions. Second, for an object to possess a property that is distributed across a spatial or temporal region, it seems that the object in question must be located at that spatial or temporal region. Third, for an object to possess a property which is irreducibly-extended across some spatial or temporal region, it seems that the object in question must itself be extended across that region. If these three observations are correct, then it will turn out that the distributional property solution to the problem of

VII. Two More Advantages of Priority Perdurantism

As a way of concluding my presentation of Priority Perdurantism, I would like to end by pointing to two further advantages of the view: that, unlike other varieties of perdurantism, it is consistent both with hunky time and with the existence of irreducibly temporally-extended actions, such as those pertaining to deliberative agency.

There are at least three possible varieties of perdurantism, distinguished from one another by the sorts of temporal entities that they take to be ontologically fundamental and the sorts of temporal entities that they take to be ontologically derivative. First, there is the bottom-up view, analogous to priority microphysicalism, according to which those minimally-temporally-extended objects at the very bottom of temporal reality, the temporal atoms, are ontologically fundamental and all other temporally-extended objects composed of those temporal atoms are ontologically derivative, owing their existence and identity to those

temporary intrinsics is actually not available to the endurantist, presentist or otherwise. The first observation alone would seem to exclude presentist endurantism. For, according to presentism, only the present moment exists. There are no temporal regions across which a temporal distributional property might be distributed (see Merricks (2008) and Tallant and Ingram (2012) for similar arguments to this effect). And while the second observation is consistent with multi-location endurantism, the third observation would seem to exclude that view as well. For according to multi-location endurantism, while material objects are indeed located at several moments across time, they are not extended across time. They are not singly located at any extended temporal region. Rather, they are multi-located in time, exactly located at every subregion of some extended temporal region. Why think that for an object to possess a property which is irreducibly-extended across some spatial or temporal region, the object in question must not only be located at that region but that it must also itself be extended across that region? Consider the following case: imagine a point-sized object that is multi-located within a particular region of space in the sense that it is exactly located at every subregion within that region. Now imagine that there is some spatial distributional property distributed across that region, say “being-polka-dotted”. Should we say, in this case, that the point-sized object possesses the distributional property of being polka-dotted? It seems that we should not. It seems wrong to say that any point-sized object could possess the property of being polka-dotted, no matter how many times we multi-locate it. It seems that in order for an object to possess a distributional property, then, it must not only be located at the region across which the property is distributed, it must also itself be extended across that region. It has to have the right shape and size. It must be at least as big as the region across which that property is distributed. Similarly in the case of temporal distributional properties. No moment-sized object can possess a temporal distributional property because that property is not realized at any one moment. It is realized only across a temporal region. And so in order for an object to possess such a temporal distributional property, it seems that it must not only be located at the temporal region across which the property is distributed, it must also itself be extended across that temporal region. It has to have the right shape and size. It must be as big as the temporal region across which that property is distributed. And this is something that the endurantist cannot say. As a result, I think that only perdurantists (and perhaps “terdurantists”, since they too take material objects to be temporally-extended, but without possessing temporal parts) can make use of the temporal distributional property solution to the problem of temporary intrinsics. Presentist and multi-location varieties of endurantism cannot.

temporal atoms which serve as their most basic temporal parts. Second, there is the top-down view, analogous to priority monism, according to which that maximally-temporally-extended object at the very top of temporal reality, the temporally-extended whole which we might call “the chronos”, is ontologically fundamental and all other temporally-extended objects of which the whole is composed are derivative, owing their existence and identity to that maximally-temporally-extended whole. Third, there is the middleist view, analogous to priority macrophysicalism, according which certain temporally-extended wholes at the middle of reality, say, medium-sized perduring entities like cats, trees, and persons, are ontologically fundamental. On this last view, all temporally-extended objects of which those medium-sized perduring entities are composed and all temporally-extended objects which those perduring entities themselves compose are ontologically derivative, owing their existence and their identity to those perduring entities at the middle of temporal reality.

One problem for the standard, bottom-up variety of perdurantism is the possibility of gunky time. Gunky time is, like gunky matter or gunky space, infinitely divisible. If matter is gunky, this means that every material object possesses proper parts into which it can be decomposed, and each of the proper parts of every material object itself possesses proper parts into which it can be decomposed, *ad infinitum*. If matter is like this, then there are no philosophical atoms, no simples, for, by definition, philosophical atoms or simples are material objects which do not possess any proper parts and so cannot be decomposed any further. If time is gunky, this means that every perduring, four-dimensional object possesses temporal parts into which it can be decomposed, and each of the temporal parts of every perduring, four-dimensional object itself has shorter temporal parts into which it can be decomposed, *ad infinitum*. If time is like this, then there are no minimally-temporally extended objects, no temporal atoms. And if

there are no minimally-temporally-extended objects, no temporal atoms, then there are no temporally fundamental entities on which perduring four-dimensional objects can be said to depend. Reality would be ultimately groundless.⁴⁸

Similarly, a potential problem for the top-down variety of perdurantism is the possibility of junky time. Junky time is, like junky matter or junky space, infinitely composable. If matter is junky, this means that every material object is a proper part of some larger composite material object, and every composite material object of which any material object is a proper part is itself a proper part of some larger composite, *ad infinitum*. If matter is like this, then there is no largest composite whole, no cosmos, for, by definition, the cosmos is that material object which is not a proper part of any larger composite. If time is junky, this means that every temporal entity is a temporal part of some longer temporally-extended entity, and every temporally-extended entity of which any temporal entity is a temporal part is itself a temporal part of some longer temporally-extended composite, *ad infinitum*. If time is like this, then there is no maximally-temporally-extended object, no chronos. And if there is no maximally-temporally-extended object, no chronos, then there is no temporally fundamental entity on which all other temporal entities can be said to depend. Once again, reality would be ultimately groundless.⁴⁹

Here, then, is the upshot of middleist Priority Perdurantism. If medium-sized perduring entities are fundamental in such a way that both the temporal parts of which they are composed and the longer temporally-extended objects of which they themselves are temporal parts are derivative, then the possibilities of gunky and junky time pose no threat to perdurantism's

⁴⁸ Keen readers will notice the similarity between my argument here and Schaffer's objection to priority pluralism in Schaffer (2010).

⁴⁹ Keen readers will also notice the similarity between my argument here and Bohn's objection to priority monism in Bohn (2009).

fundamental base. Make time as gunky, junky, or hunky (that is, both gunky and junky) as you like, reality will still be well-founded.⁵⁰

Another problem for the standard, bottom-up variety of perdurantism has to do with the existence of irreducibly temporally-extended actions, such as those pertaining to deliberative agency.⁵¹ It is part of the perdurantist program that perduring, four-dimensional objects possess their properties and perform their actions by virtue of possessing temporal parts which possess those properties or perform those actions at a particular time. Typically, temporal parts do not last for very long. They might not have any temporal duration at all.⁵² But thinking, reflecting, willing, and other actions characteristic of persons take time. And so it seems that no temporal part could think, reflect, will or perform other actions characteristic of persons. An act of thinking, reflecting, or willing would have to involve several temporal parts, each of which performs only some part of that action. As a result, there would be no single, conscious subject which thinks, reflects, or wills. Yes, the perduring, four-dimensional person can be said to think, reflect, or will, but that is only by virtue of the particular actions of her temporal parts, none of which itself is a thought, reflection, or volition.

Now, we might think that thinking, reflecting, and willing are such that there must be some one persisting conscious subject which completes the entire act of thinking, reflecting, or willing.⁵³ Perhaps thinking, reflecting, and willing are in principle not the sorts of actions that can be performed by a collective.⁵⁴ If so, then standard, bottom-up perdurantism has trouble accounting for these sorts of actions. Notice, however, that if perduring, four-dimensional objects

⁵⁰ And, finally, here too, my argument is, more or less, just a temporal adaptation of arguments found in Inman (2017) and Bernstein (2021) for their middleist views of material objects.

⁵¹ And there might be other instances of irreducibly temporally extended properties besides those related to deliberative agency. Perovic (2019), for example, discusses various candidates in biology, chemistry, and physics.

⁵² For a discussion of how long we should take temporal parts or stages to be, see Hawley (2001: 48-50).

⁵³ See Chisholm (1971), Smith (2010), Hochstetter (2015), Duncan (2015), and Perovic (2019) for variations on this objection to perdurantism.

⁵⁴ See, for example, van Inwagen (1990: 115-123); Perovic (2019: 447-448).

are fundamental and their temporal parts derivative, it is not the case that perduring four-dimensional objects perform their actions by virtue of possessing temporal parts which perform those actions at a particular time. Rather, it is the perduring, four-dimensional object which performs that action in the strict and proper sense, and the temporal part during which that action occurs can be said to perform that action only in the sense that it is the part in which, through which, or by means of which the perduring, four-dimensional object does so. And so, on Priority Perdurantism, there is one single persisting conscious subject which completes the whole action.⁵⁵

Certain irreducibly temporally-extended actions, then (perhaps those pertaining to deliberative agency), seem to require that there be a single persisting subject which performs the whole action and every part of that action. But there are also certain irreducibly temporally-extended actions which seem to also require that there be a single persisting object or instrument of that action present throughout every stage of the process. So, for example, let's say that raising one's arm is an irreducibly temporally-extended action. No agent can raise his or her arm in a single moment. Performing such an action takes time. And if there is a different agent at each moment, each one performing a different part of that action, then there is no one agent that raised his or her arm. Similarly, it seems that an agent can be said to raise his or her arm only if it is the very same arm at each stage of the process. For, if there are different arms at each stage of

⁵⁵ To say that there is one single persisting conscious subject which completes the whole action of thinking, reflecting, and willing is not to say that that same persisting conscious subject is always performing that act of thinking, reflecting, or willing, or always has access to previous conscious experiences. Even though I, the perduring substance, am spread out over time and possess, in the strictest sense, every property that I will ever possess, it doesn't follow that I *right now* possess every property that I will ever possess. On Priority Perdurantism, it is still very much true that I possess different properties and parts at different times. And it is the possession of those properties and parts which determines whether I am conscious of the relevant experience at that time. It does not follow from the fact that I am cold over here (pointing to my hands) that I should likewise also be cold over here (pointing to my chest), even though it is the same subject that possesses both properties. In a similar way, I can be conscious of some event over here (pointing to one of my temporal parts) and not be conscious of that same event over there (pointing to a much later temporal part) even though I am the very same conscious subject at both times. Thus, Priority Perdurantism is also compatible with more temporally-complex conscious experiences such as forgetting, remembering, and learning.

the process, then there is no arm that is raised. I think that Priority Perdurantism can accommodate this latter intuition as well.

According to Priority Perdurantism, four-dimensional perduring substances are spread out across time, possess different temporal parts at different times, and are ontologically prior to each of those temporal parts. Importantly, Priority Perdurantism is neutral with respect to what sorts of temporal parts perduring substances might possess. Perduring substances might be entirely composed of atomic temporal parts, temporal parts which are not themselves composed of any smaller temporal parts. And these atomic temporal parts might be instantaneous, having no temporal duration, or they could turn out to be extended temporal simples, extended across some temporal region without possessing any temporal parts within that region. But perduring substances might also be composed of composite temporal parts, temporal parts which are composed of temporal parts of their own (and those temporal parts might also be composed of temporal parts of their own, and so on). These composite temporal parts, like the perduring substances of which they are parts, perdure, in that they are spread out across time and possess different temporal parts at different times.⁵⁶

Priority Perdurantism is also neutral with respect to whether composite temporal parts are ontologically posterior or ontologically prior to their own temporal parts. Some composite temporal parts might be ontologically posterior to their own temporal parts, depending for their existence and their identity on those parts. But others may turn out to be ontologically prior to their own temporal parts in much the same way that perduring substances are ontologically prior to their temporal parts: each part would depend for its existence and identity on the perduring whole of which it is a part. Importantly, in such case, all of these parts would ultimately be

⁵⁶ Schaffer makes a similar point concerning the cosmos and its composite material parts at (2010: 44).

ontologically posterior to the larger perduring substance and so would not complete with that substance for any of the effects that it produces.

If some of the temporal parts of perduring substances are composite, and if some of those composite temporal parts are ontologically prior to their own temporal parts, then this allows Priority Perdurantism to preserve the claim that, in some cases, when a perduring substance performs some particular irreducibly temporally-extended action, there is also some persisting object or instrument of that action present throughout every stage of the process. Here is how that story might go. My arm is a part of me, the perduring substance. And my arm is not something that I possess only at this instant. My arm has been with me for quite some time. It seems plausible to suggest that my arm, like me, persists through time. If perdurantism is true, then my arm persists through time by being spread out across time and possessing different temporal parts at different times. Now we could say that my perduring arm perdures in the standard, bottom-up sort of way: it persists over time and undergoes various processes over time by virtue of possessing different temporal parts at different times, each of which undergoes a different part of that process. But in that case we couldn't say that it is the very same arm that I am raising throughout the whole process of raising my arm. At each moment there would be a different temporal part being situated at a different location in space, but there would be no single arm that undergoes the whole process of being raised. What the priority perdurantist can say here is that my perduring arm perdures in the alternative, top-down sort of way: it is irreducibly-temporally extended and undergoes various processes over the course of its existence by possessing different properties in or at different temporal parts. In that case we can say that not only is it the very same subject which performs every part of the action of raising my arm, it is also the very same arm that is present throughout, and the very same arm that undergoes, every

stage of the process. Once again, this is not something that the standard, bottom-up perdurantism can say.

VIII. Conclusion

Priority Perdurantism, then, has two further advantages over other varieties of perdurantism: it is consistent both with hunky time and with the existence of irreducibly temporally-extended actions, such as those pertaining to deliberative agency.⁵⁷ Naturally, these last two arguments are likely to have purchase only if one is already inclined to think that reality needs to be well-founded, or that conscious, deliberative actions are in principle not the sorts of things that can be performed by a collective. But paired with the priority solutions to the earlier puzzles, and my responses to the two earlier worries, I think that these arguments do give perdurantists some serious reasons to reconsider their priorities.⁵⁸

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⁵⁷ To reiterate, unlike bottom-up perdurantism, which is compatible with junky time, middleist Priority Perdurantism is also compatible with gunky time and with the existence of irreducibly temporally-extended actions. Unlike top-down perdurantism, which is compatible with gunky time and with the existence of irreducibly temporally-extended actions, middleist Priority Perdurantism is also compatible with junky time. And so middleist Priority Perdurantism has the advantage over other varieties of perdurantism that it is compatible with gunky time, junky time, and the existence of irreducibly temporally-extended actions.

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