Time for distribution?

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1. Introduction

The presentist – one who believes that only present objects exist – faces a familiar problem. If only present objects exist, then what makes true our true claims about the past? What is the 'truth-maker' for the proposition <Ross was a child>?[1] It can't be Ross's past self; the presentist claims that Ross's past self does not exist. According to Ross Cameron (2011), the truth-makers for past and future tensed propositions are presently instantiated Temporal Distributional Properties (TDPs). These properties are of the form: *being-a-child-and-then-being-an-adult-and-then-being-a-senior-citizen*. (TDPs are more complex than this. The example is simplified and designed to describe the lifespan of Ross at only three instants, existing only in three states.) Ross's instantiation of this property makes it true that <Ross was a child>.

We present an argument against Cameron's view.[2] There are two ways that we might understand the term 'distribute' as it appears in 'TDP'. On one reading the resulting TDPs are not up to the task of playing the truth-maker role; on the other, TDPs are incompatible with presentism. Before turning to this, we explain the putative nature of a TDP and try to offer some motivations for Cameron's view.

2. Spatial distribution and temporal distribution

We begin with the spatial analogue of TDPs, Spatial Distributional Properties (SDPs), as they appear in Parsons (2004). Consider an object, O, which is white with black spots – a domino, for instance. O is wholly white at places and wholly black at others. But O itself cannot be both wholly white and wholly black; something must explain this apparent contradiction. Parsons claims that we can use SDPs as a way to explain how objects are *across regions of space*. In the case under consideration, O instantiates the SDP: *being-polka-dotted*. This SDP is a fundamental, primitive property and is not reducible to the colour properties that O has at its various spatial parts.

Cameron adapts his TDPs from Parsons' SDPs. In the same way that O's instantiation of the relevant SDP explains how it is *across space*, an objects' instantiation of the relevant TDP explains how it is *across time*. For example, Ross was a child but is now a man. According to Cameron, this is because Ross instantiates the TDP: *being-a-child-and-then-being-an-adult-and-then-being-a-senior-citizen* (cf. Cameron (2011: 68)). The TDP, much like the

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1 We borrow the example from Cameron (2011: 61).

2 We do not discuss Cameron's (2011: n. 17) 'fall-back' position as this is, it seems to us, a wholly distinct view.

SDP, is a fundamental, primitive property and is not reducible to properties that its bearer has at various times.

Before we show that Cameron's view fails, it is important to note that it may fare relatively well in contrast to some other putative solutions to the truth-maker problem. The Lucretian (e.g. Bigelow 1996) claims that the truth-makers for true past-tensed propositions are properties, instantiated by the world, such as: *previously containing Ross as a child*. There is an intuitive dissatisfaction with Lucretian properties, which has been described as their 'pointing beyond' what exists.[3] This notion of 'pointing beyond' is imprecise; nonetheless, the property *previously containing Ross as a child* seems, in some sense, to be radically unlike more paradigmatic properties. It seemingly makes a difference, after all, to how things *were* – not to how things *are*. That seems *intuitively* suspicious. Cameron (2011: 60–62) analyses 'pointing beyond' as a matter of properties not making a present intrinsic difference to the nature of their bearer. All *genuine* properties should, he thinks, make a difference to the present intrinsic nature of their bearer. According to Cameron, the property *previously containing Ross as a child* does not make a difference to the present intrinsic nature of the world. Rather, it makes a difference to how the world *was*. Because of this, we ought to reject Lucretianism.

TDPs, however, *do* make a difference to the present intrinsic nature of their bearers (by making a difference to the intrinsic nature of their bearers at *all* times, including the present) and so do not 'point beyond'.[4] This, Cameron (2011: 66) thinks, gives us reason to prefer TDPs to their Lucretian rivals.

3. *The distribution intuition*

Presentists do not believe in regions into which TDPs can be distributed, for non-present times do not exist. Because of this, Cameron's view ought to be rejected.

There is an obvious spatial analogue that helps explain our point. The spatial analogue of Cameron's view is that of a point-sized object instantiating the SDP *being-polka-dotted*. No point-sized object can instantiate the property, *being-polka-dotted* – the property of *being-white-here-black-there-white-there* – and so on. A point-sized object cannot instantiate this property because it does not exist at each of the various 'here's' and 'there's' mentioned in the description of the property. To instantiate this SDP our point-sized object would have to grow in size until all of the locations specified in the SDP are within its borders.

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3   See, e.g. Sider (2001: 40–42).

4   This assumes, of course, that Cameron has the correct diagnosis; something we are prepared to allow here, though one of us is inclined to dispute the analysis.

So far as we can tell, matters are exactly the same for the presentist. The present is of zero-duration (or perhaps some indivisible minimal duration). In that case, a TDP that fixes how a present object is *across times* cannot be instantiated, for the object charged with instantiating the TDP lacks the require extension into which the TDP can distribute. If presentism is true, then we should reject TDPs.

Cameron anticipates this sort of objection and offers a reply, arguing that presentists are already obliged to abandon this notion of distribution. Presentists accept the existence of ordinary persisting entities such as tables and chairs. Cameron thinks that such objects must be regarded as temporally extended because they persist through time. If such objects are temporally extended, then, according to Cameron, they are 'distributing' into or across times. Because of this Cameron thinks that the presentist is *already* committed to denying that distribution requires the existence of regions into which properties and objects distribute. In Cameron's own words:

> ... the presentist is *already* committed – simply *qua* presentist – to denying something akin to the intuition driving this objection, and so even if it is a cost to deny it, it's a cost she has to pay simply to be a presentist: there is no *further* cost to being a presentist truthmaker theorist. (2011: 72)

Were the presentist not to give up on this intuition about distribution they would be impugned by the following:

(P1) There are temporally-extended entities   (Assumption)
(P2) Extended entities exist iff regions exist for them to distribute across   (Distribution Intuition)
(C) Presentism is false

(Henceforth, (P2) will be referred to as the 'distribution intuition'.)

Cameron thinks this sufficient to show that presentists must abandon the distribution intuition. It is therefore no cost of his particular view of presentism that we must give up on the distribution intuition.

4. Temporal extension re-evaluated

Cameron is wrong. The presentist is not committed to denying the distribution intuition. (P1) is opaque. Consider the term 'temporally-extended entity'. Adopting eternalism, this evokes the idea of an object *literally* spread-out through time; being literally 'there' at different temporal regions, all of which are within the scope of our most unrestricted quantifier.[5]

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5   This is regrettably metaphorical: nonetheless, the idea is clear enough.

However, adopting presentism, to say that an entity is 'temporally-extended' is to say something rather different. Thus, Hinchliff (1996):

> ...the presentist does not confine our existence to a single moment. I have a past, and I have a future. That is, I have existed, and I will exist. I have existed at past times, and I will exist at future times...if one focused on just the facts in the present moment, one might be worried that one has no past or future on the presentist solution. But to dispel the worry, one only need consider the plain fact that one has existed and one will exist. (1996: 127)

'Temporally-extended' here means '*having existed*, *existing* and *going to exist*'.[6] Thus, any presentist use of 'temporal extension' should be rephrased to make this apparent. In language appropriate to presentism, that would give us the following reconstruction of Cameron's argument:

(P1*) There are entities that *have existed*, *exist* and *will exist* (Assumption)

(P2*) Entities that *have existed*, *exist* and *will exist* do so iff regions exist for them to distribute into or across

(C) Presentism is false

Although the argument is valid, (P2*) is not the distribution intuition. It is no part of the distribution intuition that objects that *have existed*, *exist* and *will exist*, do so iff regions of past and future time exist. Indeed, denying (P2*) is essential to presentism. The presentist thinks that there *have existed* a number of objects, but that this does not thereby commit them to the existence of the past and future. So Cameron has not shown that the presentist is committed to the denial of (P2). Once we appropriately interpret (P1) as (P1*), we see that the presentist is only committed to the denial of (P2*), not (P2).

Cameron concedes that on his view the distribution intuition embodied in (P2) is to be given up. This is a substantial cost of *his* view; it is not a cost of presentism itself.

5. On the denial of (P2) and (P2*)

Does this matter? Can Cameron simply reply that he merely intends to deny (P2*)? Perhaps it is no part of his position to say anything more than that TDPs have been, are and will be instantiated. We have said nothing that *forces* Cameron to deny (P2). We have merely reported that Cameron *claims* he must give up (P2).

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6 This also seems to be the view taken by Lowe (2006: 283–88) and Merricks (2007: 124–25), who both argue that time does not decompose into 'regions', and is not something into which objects might literally extend.

Cameron cannot proceed in this way; the claim cannot be that TDPs make true our talk about the past because they are 'distributional', which, in turn, is to say nothing more than that they *existed* and *will exist*. Such an argument would simply be to give up on attempts to locate the requisite truth-makers; it would amount to saying that a property, *P*, makes true our talk about the past iff *P existed*. A property's *having existed* is not an existing truth-maker for our talk about the past; it is not an existing entity at all. So although this reading of Cameron's view is not inconsistent with presentism, it fails to do the necessary truth-making work.

Thus, there must be more to the 'distribution' of TDPs than that the TDPs existed and will exist. This means that we require a more robust sense of 'distribution'. We must say that the TDPs distribute in some other way. But the only other way of conceptualizing distribution with which we are familiar is that which is described by the distribution intuition, (P2), where an object or property is distributed across a region by existing at every part of that region.

This sense of 'distribute' is, however, not compatible with presentist TDPs. If the TDPs distribute (in anything like the way just described) across the past and future then this requires the existence of the past and future. This was the lesson we took from the discussion of the SDPs. A point-sized *spatial* object cannot instantiate the property *being-polka-dotted*; a point-sized object simply lacks the required spatial extension. In the same way, a persisting object with zero duration (or of some minimal temporal duration) cannot instantiate the kind of TDP that Cameron describes. Similarly, it lacks the required *temporal* extension. We thus think that Cameron's view is false.

6. *Denying (P2) – what's in a name?*

So far as we can see, Cameron is simply obliged to deny (P2) but insist that we still have distribution. On this view, we would have to allow that TDPs are distributional, and bear the cost of denying the distribution intuition. This would commit us to the following pair of claims:

(i)   The property 'being-a-child-then-being-an-adult-then-being-a-senior-citizen' is distributional.
(ii) The property specified in (i) – and its ilk – distribute into regions that don't exist.

The cost of such a view is too high. The distribution of a property *requires* a region into which it is to be distributed. Once more: an object cannot be polka-dotted (or bear the SDP *being-polka-dotted*) without being extended in space. The SDP must *distribute* and if there is no spatially extended region of its bearer into which it can distribute, then the SDP cannot be instantiated. In the same way, a TDP can only distribute if its bearer has some existing temporal extension into which it may distribute. It is a substantial cost of any thesis if it requires us to deny this.

Indeed, we find that once we deny the distribution intuition, (ii), we lose our grip on what is meant by 'distribution' (unless one means something like (P2*) and 'temporal distribution'). We do not see in what sense the property specified in (i) can be thought to be distributional at all.

But this in fact suggests a defence of Cameron's view. We grasp the property described in I well enough (perhaps). Since the trouble is being caused by the term 'distribution' perhaps we should drop it. Nothing is lost, so we might claim, by denying that these properties distribute.

Even if we remove the term 'distribution', the problem remains. The property, recall, is that of '*being-a-child-then-being-an-adult-then-being-a-senior-citizen*'. The question we should ask is: do the times, to which 'then' refers, exist? Specifically: the property in question includes a portion that says of its bearer that it is 'then a senior citizen'. Does a time exist at which the bearer of the property is a senior citizen? If it does not, then we ought to deny that the property can be instantiated. To say that we can bear the property of being 'then a senior citizen', but that the time that is 'then' does not exist, makes no sense.

A further spatial analogy brings this out. Suppose that there is a possible world at which there exist spatial points, s_1, s_2 and s_3. At such a world it is clear that the property *being-red-at-s_1-blue-at-s_2-red-at-s_3-blue-at-s_4* cannot be instantiated by an object, O. The property cannot be instantiated because s_4 does not exist and so O does not exist at s_4. It is of the essence of the property to make a difference to the intrinsic nature of O at s_4. Thus, O cannot instantiate the property in the absence O's existence at s_4.

The temporal case is similar. Each 'then' in the property makes reference to a time. It is of the essence of the putative property that it makes a difference to the intrinsic nature of its bearer at each of those times. If those times do not exist then the property cannot be instantiated, for it cannot make that difference. Thus, whether or not the property is taken to be distributional is of no consequence.

7. Conclusion

Cameron's view leaves us with an opaque conception of distribution conjoined to the denial of the highly intuitive distribution intuition, (P2). If we must locate truth-makers for talk about the past and future, then we must do better than this.[7]

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