Presentism, Temporal Distributional Properties, and Fundamentality*

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Abstract

According to presentism, everything that exists is present. According to the truthmaker principle, for every true proposition there is a truthmaker – an entity that suffices for the truth of that proposition. According to realism about the past, there are true propositions about the past. Together these claims necessitate presently existing truthmakers for truths about the past (presentist truthmakers).

Cameron (2010) argues that temporal distributional properties (TDPs) can play the role of presentist truthmakers. Corkum (2014) argues that they cannot. I argue against Corkum's objections. In §2, I introduce, and outline the motivation for, TDPs. In §3, I show that unless TDPs are stipulated to be fundamental, as Cameron does, they can be reduced to temporal non–distributional properties, which are unable to play the role of presentist truthmakers. In §4, I argue against Corkum's two objections to Cameron's stipulation. Corkum's first objection is that Cameron has no grounds on which to stipulate that TDPs are fundamental, and that the reducibility of TDPs to temporal non–distributional properties (as discussed in §3) shows that they are not. I argue that the burden of proof is not on Cameron to argue that TDPs are fundamental, but on Corkum to argue that they are not, and that to argue from the reducibility of TDPs to their non–fundamentality is to beg the question against Cameron: the reduction is only possible once their non–fundamentality is assumed. Corkum's second objection is that if Cameron is allowed to stipulate that TDPs are fundamental in order to escape objections, then a superior alternative account is allowed to make the same move, rendering Cameron's account redundant. I argue that the cases are asymmetric: the alternative account faces a legitimate objection whilst Cameron's account does not.

1 Introduction

According to presentism, everything that exists is present. According to the truthmaker principle, for every true proposition there is a truthmaker – an entity that suffices for the truth of that proposition. According to realism about the past, there are true propositions about the past. Together these claims necessitate presently existing truthmakers for truths about the past (presentist truthmakers). Cameron (2010) argues that temporal distributional properties can play the role of presentist truthmakers. Corkum (2014) argues that they cannot.

In this essay, I argue against Corkum's objections. In §2, I introduce, and outline the motivation for, temporal distributional properties. In §3, I show that unless temporal distributional properties are stipulated to be fundamental, as Cameron does, they can

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be reduced to temporal non–distributional properties, which are unable to play the role of presentist truthmakers. In §4, I argue against Corkum's two objections to Cameron's stipulation. Corkum's first objection is that Cameron has no grounds on which to stipulate that temporal distributional properties are fundamental, and that the reducibility of temporal distributional properties to temporal non–distributional properties (as discussed in §3) shows that they are not. I argue that the burden of proof is not on Cameron to argue that temporal distributional properties are fundamental, but on Corkum to argue that they are not, and that to argue from the reducibility of temporal distributional properties to their non–fundamentality is to beg the question against Cameron: the reduction is only possible once their non–fundamentality is assumed. Corkum's second objection is that if Cameron is allowed to stipulate that temporal distributional properties are fundamental in order to escape objections, then a superior alternative account is allowed to make the same move, rendering Cameron's account redundant. I argue that the cases are asymmetric: the alternative account faces a legitimate objection whilst Cameron's account does not.

2 Intrinsic Determination and Temporal Distributional Properties

One attempt at providing the presentist with a truthmaker for past truths is Bigelow's (1996) account of Lucretian properties – presently existing tensed properties instantiated by the world. Under Bigelow's account, for example, 'dinosaurs once existed' is made true by a presently existing tensed Lucretian property instantiated by the world – something like <being such so as to have contained dinosaurs>.

Sider (2001) charges Lucretian properties with ontological cheating, by which he means two things: they are hypothetical (they 'point–beyond' their bearers) and they are not categorical (they do not 'point–at' their bearers). To quote Sider (2001, 41), "[w]hether the world has the property *previously containing dinosaurs* is not a matter of what the world itself is like, but points beyond itself, to the past." Cameron (2010) takes these charges to amount to the claim that Lucretian properties tell us nothing about the intrinsic nature of their bearers in the present, and proposes to admit only difference–making properties – properties that make a difference to a bearer's intrinsic nature – into our ontology, sifting out unwanted non–difference–making properties with the criterion of intrinsic determination:

> for all objects x and properties F and times t, if x instantiates F at t, then x has the intrinsic nature at t that it has partly in virtue of instantiating F at t.
>
> (Cameron, 2010, 5)

Bigelow's properties do not satisfy intrinsic determination: the world does not have its present intrinsic nature (even partly) in virtue of instantiating the property <*being such as to have contained dinosaurs*> (another world could have a different history to our own and thus fail to instantiate this property, yet nonetheless be identical to our own world in terms of its present intrinsic properties). So, Lucretian properties cannot serve as presentist truthmakers.

Cameron's claim is that temporal distributional properties do the job of providing for presentist truthmakers. A distributional property is the way that something is across a region: a spatial distributional property is the way that something is across space; a temporal distributional property is the way that something is across time. As Josh

Parsons (2004, 1) puts it, "a distributional property is like a way of painting, or filling in, a spatially [or temporally] extended object with some property". For example, 'dinosaurs once existed' is made true by a presently existing temporal distributional property instantiated by the world, which details how the world has been at every instant in time – something like <*being like x, then like y*>[2], where x maximally describes the world at some instant of time in which it contained dinosaurs. It is important to note that it is not just one part of the property, the <*being like x*> part, that serves as the truthmaker for 'dinosaurs once existed'. Temporal distributional properties (and properties more generally) do not have parts. It is the property as a whole which serves as the truthmaker, which is not divided but spread across its bearer.[3]

Temporal distributional properties satisfy intrinsic determination: the world does have its present intrinsic nature in virtue of instantiating <*being like x, then like y*>, where y maximally describes the world right now, so they are difference making. Again, this is the case not because <*being like y*> is a part of <*being like x, then like y*>, but because of the latter property as a whole. All else being well, then, temporal distributional properties seem fit to serve as presentist truthmakers.

3 The Reducibility of Temporal Distributional Properties

The reductionist about distributional properties thinks that distributional properties like <*being polka–dotted red on white*> can be reduced to non–distributional properties like <*being an x such that there are some ys, and the ys are part of x, and the ys are of the right sorts of colour, and the ys are spatially related in the right sorts of ways*>.[4] Parsons (2004) objects to the possibility of such a reduction by pointing out that non–idealised (i.e., real world) instances of polka–dots will have a non-uniform colour distribution that cannot be reduced to a non–distributional colour property. No non–idealised polka dot will be uniformly red, and that heterogeneity will make it impossible to characterise it as a y of the right sort of colour. Moreover, the reductionist has to contend with gradients of colour, from red to blue, say, and here again there will be no ys that are the right sort of colour, for any extended y will be a gradient of some colour to another between red and blue (perhaps some very closely related purples).

To avoid this problem, the reductionist must substitute polka–dots for extensionless points which can bear neither non–uniform colour distributions nor, more generally, distributional properties. Parsons puts it like this:

> [W]hen, and only when, red and white point–sized objects [i.e., the smallest spatial parts of the property bearer] are spatially arranged in the right way, you get something polka–dotted red on white. [Then] [<*being polka–dotted red on white*>] is equivalent to a non–distributional property specifying the arrangement of such points, and the same sort of story will work for any other distributional property.
>
> (Parsons, 2004, 5)

If the reduction is to be warranted in general then this must be possible in every case, and so every extended object must consist of extensionless points (for if it didn't there would be room for distributional properties). This places a restriction on the reductionist

[2] More accurately, <*being like . . . , then like x, then . . . , then like y, then . . .* > for every way the world has been, is, or will be; but that's stylistically unwieldy, so I'll use the formulation <*being like x, then like y*> to mean this.

[3] Thanks to Helen Steward for insisting on clarity here.

[4] Example properties due to Parsons (2004, 5)

that she cannot meet: given the possibility of gunk (whereby there are no points, that is, space is infinitely divisible) or spatially extended simples (whereby a partless object occupies two points or more, that is, exists (simpliciter) at more than one point), there is room for an extended object with no extensionless parts and so room for a spatial distributional property that will not reduce (Parsons, 2004, 6-8). That gives us reason to rule out the equivalence of the two kinds of property, and so reason to rule out the reduction.

The same argument against reduction does not hold for temporal distributional properties; at least not for presentists. Consider the temporal distributional property <*being like x, then like y*>. Just as the property <*being polka–dotted red on white*> is distributed across its spatially extended bearer, so too the property <*being like x, then like y*> is distributed across its temporally extended bearer, the world. To paraphrase Parsons:

> [W]hen, and only when, x–like and y–like instance–sized objects [i.e., the smallest temporal parts of the property bearer] are temporally arranged in the right way, you get something x–like then y–like. Then <*being like x, then like y*> is equivalent to a non–distributional property specifying the arrangement of such instants, and the same sort of story will work for any other temporal distributional property.

If the reduction is to be warranted in general then this must be possible in every case, and so every temporally extended object must consist of extensionless instants. This places a restriction on the reductionist that she can meet, but only if she's a presentist. Given presentism there is no possibility of temporal gunk. If there were, then any time which is present would be divided into smaller parts, all of which would then be present. But the present exists only at an instant. So, there is no temporal gunk. There is also no possibility of temporally extended simples. If there were, then they would exist (simpliciter) at more than one time. But, according to presentism, everything that exists exists in the present, and as we have just seen, the present cannot occupy more than one time. So, there are no extended simples. Thus, there is no room for an extended object with no extensionless temporal parts, and so no room for a temporal distributional property that will not reduce. That demonstrates the equivalence of the two kinds of property, and that warrants the reduction.

As such, there is (yet) no principled metaphysical reason why temporal distributional properties cannot be reduced to conjunctive non–distributional properties. Let's call this the reduction observation. This is of potential concern to Cameron, since conjunctive non–distributional properties reduced from temporal distributional properties have parts that are wholly past–facing. For example, the temporal distributional property <*being like x, then like y*> is reduced to a conjunctive non–distributional property, the <*being like x*>) conjunct of which is wholly past–facing, and which thus fails to satisfy intrinsic determination, ruling it out as a legitimate property, and ruling it out as a presentist truthmaker.

Cameron's reply is to block the reduction by stipulating that temporal distributional properties are fundamental:

> It's true that for any temporal distributional property, there's a very complex big conjunctive property made up of the objectionable past-directed properties and unobjectionable present-directed properties [the] instantiation of which would have exactly the same effect as the distributional property. In that sense, they're equivalent. But the

> temporal distributional property is fundamental, whereas the conjunctive property is not. [...] Distributional properties cannot be broken up into simpler components: there is just one property here, and it is fundamental – and it is exactly the same property that is grounding truths about how the bearer now is that is grounding truths about how the bearer was.
>
> (Cameron, 2010, 11)

Since temporal distributional properties are stipulated to be fundamental, they cannot be reduced to non–distributional properties, leaving it open to the presentist to employ them as truthmakers.

4 The Fundamentality of Temporal Distributional Properties

Corkum's claim is that Cameron's stipulation of the fundamentality of temporal distributional properties is illegitimate. His first objection has two parts: first, that Cameron has no grounds on which to stipulate that temporal distributional properties are fundamental, and second, that the reduction observation is evidence that they are not.

> On what grounds can the distributionalist make this stipulation? It can be difficult to adjudicate on such matters. One philosopher's bold conjecture is another's undefended assumption. However, in this case the onus is clearly on the distributionalist to defend the stipulation. Some of our examples of temporally distributed properties appear to be conjunctive properties and so prima facie not irreducible. For example, the property of having been a child and being now an adult appears to be explicable in terms of the properties of being a child and being an adult, along with a temporal arrangement of these properties
>
> (Corkum, 2014, 5)

With regard to the first part, Cameron's reply is that the proponent of a theory is permitted to stipulate anything they want.[5] Of course, once something has been stipulated it can be objected to (the objection can hardly be made prior to that which is being objected to), but then the burden of proof lies with the opponent. Sider (2006, 81-82) makes the point that the proponent of a thesis is under no obligation to convert his opponent to his way of thinking, and is required only to resist her attacks. That applies here: it is perfectly legitimate for Cameron to stipulate that temporal distributional properties are fundamental, and if his opponent doesn't think that they are fundamental, then the burden of proof is on her to demonstrate why.

With regard to the second part, I take Corkum to be saying that even if it were legitimate for Cameron to initially stipulate the irreducibility of temporal distributional properties without any evidence for their fundamentality, this changes when charges are bought against it. The reduction observation is evidence against the fundamentality of Cameron's property, and the burden of proof is now on Cameron to provide evidence for their irreducibility, which he cannot.

But that's not quite right. The initial stipulation of fundamentality blocks that reduction. As Sider pointed out, Cameron is under no obligation to convert Corkum, and Cameron is under no obligation to provide evidence for the fundamentality of his properties. His

[5] Thanks to Ross Cameron, Helen Steward, and Jason Turner for convincing me of this point.

intellectual obligation in the face of Corkum's objections is not to provide arguments for the thesis that temporal distributional properties are fundamental, but rather to provide arguments against those objections – against the reductionist thesis that they are explicable in terms of non–distributional properties appropriately arranged. And this he has done by stipulating their fundamentality: temporal distributional properties are not explicable in terms of non–distributional properties because the latter have parts that are wholly past–facing and as such fail to satisfy intrinsic determination, and the former do not. You can't explain one thing in terms of another thing when they're demonstrably inequivalent.

So far, then, I've argued that it is legitimate for Cameron to stipulate the fundamentality of temporal distributional properties, and that, once stipulated as such, the reduction observation does not constitute an objection against their fundamentality.

Corkum's second objection is that if it is legitimate for Cameron to stipulate that temporal distributional properties are fundamental, then it is legitimate for proponents of Lucretian properties to stipulate that Lucretian properties satisfy intrinsic determination. If this is true, then either (i) if the consequent is false, then the antecedent is false by modus tollens, or (ii) if the consequent is true, then there is no need for Cameron's properties, so his stipulation of their fundamentality is self–defeating.[6]

I take Corkum's reasoning to be as follows. The reduction observation gives us reason to believe that temporal distributional properties reduce to non–distributional properties, and if that is the case, then they can't do the work that presentists require of them. In response, Cameron just stipulates that they don't reduce, and the problem goes away. Analogously, there is reason to believe (see §1) that Lucretian properties do not satisfy intrinsic determination, and if that is the case, then they can't do the work that presentists require of them. So in response, why can't Bigelow just stipulate that they do satisfy intrinsic determination, and let the problem go away? If Cameron can do it, why can't the proponent of Lucretian properties?

To this, Corkum anticipates the following response:

> The distributionalist may respond that there is a salient difference between the two cases. In the one case, Lucretian properties are stipulated as making an intrinsic difference in the world; in the other case, temporal distributional properties are stipulated to be irreducible.
>
> (Corkum, 2014, 28)

Corkum is right that the distributionalist will respond by pointing out a salient difference in the cases, but he misidentifies what that salient difference is. What is being stipulated is irrelevant. What's relevant is that whilst there is an argument forwarded for the thesis that Lucretian properties do not satisfy intrinsic determination, there is no argument forwarded for the thesis that temporal distributional properties are not fundamental. The salient difference is that there are arguments against the satisfaction of intrinsic determination by Lucretian properties where there are none against the fundamentality of temporal distributional properties. One might think that the

[6] I'll leave aside discussion of the claim that the rehabilitation of Bigelow's properties would make Cameron's redundant. All Corkum has to say on the matter is this: "But if it is permissible to stipulate that Lucretian properties [satisfy intrinsic determination], then the Lucretian can meet the challenge [of providing for a presentist truthmaker], and there is no reason to embrace [temporal distributional properties]. For these reasons, the stipulation that temporal distributional properties are [fundamental] is either unpersuasive or self-defeating."

reduction observation counts as just such an objection, but that objection would beg the question: the reduction only goes through if temporal distributional properties are non–fundamental, and to assume that they are in order to prove that they are is question begging.

Why is this the salient difference? Well, assume that in the formulation of their respective theses, the proponent of Lucretian properties stipulates that they satisfy intrinsic determination, and the proponent of temporal distributional properties stipulates that they are fundamental. Now assume that an objection is given to each property. Clearly, in both cases, reiterating the initial stipulation is not enough, as it is still subject to the objection raised. What is required is a defence of the stipulation against the attack. In actuality, just such an objection has been raised for the proponent of Lucretian properties, and it is obviously not enough just to reiterate the claim that is under attack. No such objection has been raised for Cameron, so his initial stipulation remains unsullied. Put another way, the salient difference is this: Cameron's stipulation is a legitimate initial formulation; Corkam's proposed stipulation is an illegitimate response to objections.

5 Conclusion

Cameron's claim is that temporal distributional properties are truthmakers, which, if true, resolves the trilemma between presentism, truthmaker theory, and past truths. To do so he needs to stipulate that they are fundamental, which Corkum objects to. I have argued that Corkum's first objection fails because (i) it is legitimate for Cameron to stipulate their fundamentality, and (ii) given that stipulation, the reduction observation fails as an objection to their fundamentality. I have also argued that Corkum's second objection fails because, whilst there is an objection made against the satisfation of intrinsic determination by Lucretian properties, there is no objection made against the fundamentality of temporal distributional properties. Of course, whether or not we are justified in believing that temporal distributional properties are truthmakers under presentism depends, in part, on whether or not we are justified in believing that they are fundamental. My claim here is not that they are, but that Corkum's argument that they are not is unsuccessful. It remains to be seen whether there are such arguments.

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