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# PRESENTISM, PERSISTENCE AND COMPOSITION

BY

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**Abstract:** Pace Benovsky's 'Presentism and Persistence,' presentism is compatible with perdurantism, tropes and bundle-of-universals theories of persisting objects. I demonstrate how the resemblance, causation and precedence relations that tie stages together can be accommodated within an ersatz presentist framework. The presentist account of these relations is then used to delineate a presentist-friendly account of the inter-temporal composition required for making worms out of stages. The defense of presentist trope theory shows how properties with indexes other than *t* may be said to exist at *t*. This involves an account of how times other than *t* exist at *t*, and how times may be multiply located at any given time. Benovsky's objection to bundles of universals is shown to assume that a bundle of properties must have the properties of its element properties.

The price of a philosophical theory includes the extent to which it requires or precludes acceptance of other theories. Presentism – the view that everything temporal is present<sup>1</sup> – is frequently thought to be very costly in relation to views about persistence. Presentism is frequently thought to require endurantism, the view that things persist by being wholly present at every time when they exist.<sup>2</sup> And it is often thought to preclude perdurantism, the view that persisting things are either worms or stages.<sup>3</sup> (Worm theory is the view that persisting things are worms, i.e. sums of non-overlapping temporal parts. Stage theory is the view that persisting things are the temporal parts of worm theory.)<sup>4</sup> In 'Presentism and Persistence' (2009), Jiri Benovsky defends the popular view that presentism is incompatible with perdurantism. He seconds a well-known argument against the combination of presentism and worm theory, and defends a new argument against a presentist stage theory. Benovsky then proceeds to constrain presentism further by arguing that although the view is compatible with an endurantist conception of persistence, such a view requires that objects not

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be construed as bundles of properties, but rather must be taken to be a union of a substratum with non-spatio-temporal universals. If correct, Benovsky's arguments would seriously raise the price of the commitment to presentism. I shall argue, however, that Benovsky does not succeed in showing presentism is incompatible with perdurantism and that he does not succeed in showing that an endurantist version of presentism is committed to a substratum-with-universals account of objects.

## I.

Benovsky organizes his discussion around a photograph which, because of its long exposure, depicts a fuzzy human figure – Sam – standing and sitting (Benovsky, 2009, pp. 292–293). The interval captured by the picture lasts from  $t_1$  to  $t_6$ , with Sam sitting from  $t_1$  to  $t_3$  and standing from  $t_4$  to  $t_6$ . Because Benovsky's objection to presentist stage theory appeals explicitly to a principle which I will argue underlies his rejection of presentist worm theory, I reverse the order of Benovsky's presentation and consider presentist stage theory first. Worms are sums of (usually)<sup>5</sup> non-simultaneous temporal parts. Stages are the temporal parts of worm theory. On worm theory the persisting object is the sum of the temporal parts. On stage theory the persisting object is the temporal part. For stage theory, to say that the object, O, persists from  $t_1$  to  $t_2$  is to say that O exists at  $t_1$  and bears the temporal counterpart relation to a stage that exists at  $t_2$ . Since counterpart-related stages are almost never simultaneous, it follows that the relation connects items that exist at different times. Given presentism, at most one of the relata of such relations is present, so that these relations will generally involve a connection between something that exists and something that does not. The temporal-counterpart relation supervenes upon such relations as resemblance, causation, and spatio-temporal distance. But, Benovsky says, the required relations cannot obtain on presentism since 'a non-existent individual (Sam at  $t_1$ ) [cannot] bear any degree of resemblance and have any other (spatio-temporal and causal) relations to an existent flesh-and-blood individual (Sam at  $t_4$  – the present time)' (Benovsky, 2009, pp. 300–1).

It is well known that presentism faces a general problem accounting for the apparent relations between present and non-present things.<sup>6</sup> Present things resemble past things; present events are caused by past events; present events occur after past events; just to mention a few. Since resemblance, causation and succession seem to be relations, given presentism these facts seem to involve existing things being related to non-existing things. Presentists typically allow that it is *true* that present things resemble past things, that they are caused by them, and occur after them. Faced with the difficulty that it seems impossible for these things to be true

unless present things are indeed related to past – i.e. non-existent – things, presentists typically argue that these truths can be grounded in either relational or non-relational facts that involve nothing (temporal) that is non-present.<sup>7</sup> Thus, the datum that present things stand in apparent relations to non-present things is alleged to be grounded in<sup>8</sup> presentist friendly facts. If one of these proposals can be applied or adapted to the problem of temporal counterpart relations between present and non-present things, then the presentist can allow the truth that non-simultaneous stages are temporal counterparts without conceding that this involves something standing in a relation to a non-present thing. I believe this can be done.

I begin by supposing that the temporal counterpart relation<sup>9</sup> either is or supervenes upon relations of succession, resemblance and causation. Since Benovsky does not identify any further relations as relevant to the obtaining of the temporal counterpart relation, it will suffice to answer his challenge if those apparent relations can be understood in presentist-friendly ways. Moreover, as Benovsky points out, these are the relations typically appealed to in explaining what grounds the temporal counterpart relation. If truths about the causal, successive, and resemblance connections between stages can be understood in presentist-friendly terms, then so can truths about the temporal-counterpart relations between stages.

The presentist-friendly accounts of resemblance, causation, and succession I offer assume an ersatzer presentist ontology (see Crisp, 2007; Bourne, 2006a and b; Markosian, 2004). Ersatzer presentism appeals to ersatz times to ground the truth of statements that seem to require the existence of past or future objects or times. There are some internecine disputes among ersatzers, so I will be as ecumenical as I can. Propositions play a crucial role in the development of ersatzer presentism. A proposition is what is expressed by a meaningful sentence. For example, among propositions there are [Mary is happy], [ $2 + 2 = \text{four}$ ], and [Obama is president]. Crucially, propositions may or may not obtain or be true, but exist either way. Thus the proposition [Mary is sad] is just as real as the proposition [Mary is happy]. Also, I assume that propositions are either timeless or sempiternal. Finally, propositions stand in entailment relations. [Obama is president] entails that [Obama is conscious]. The entailment of one proposition by another does not require that either be true. An ersatz time can now be defined as a maximal consistent proposition. A proposition is consistent iff it is possibly true. Proposition P is maximal iff, for all propositions, Q, P either entails Q or it entails the denial of Q.<sup>10</sup> Intuitively, an ersatz time represents the various objects and events existing and occurring at (what would be) a concrete time. Ersatz 1982 is the maximal proposition that represents the events that occurred in 1982; ersatz 2034 is the maximal proposition that represents the events that will occur in 2034. (I will refer to ersatz times by putting their names in bold.) Not all maximal consistent propositions are times. The maximal consistent

proposition that entails [Pigs fly] is not a time because pigs never have, do not, and (presumably) never will fly. Some mechanism is therefore necessary for specifying which of the set of maximal consistent propositions are times. Both Crisp and Bourne propose that the ersatz structures that represent the actual history of the world do so in virtue of standing in the abstract analogue of the concrete succession relation.<sup>11</sup> Ersatz succession is an asymmetric, transitive relation ordering all the maximal consistent propositions that have, do, and will obtain.

With these definitions in hand, it is now possible to characterize the succession relation between two stages in a way that is consistent with presentism. Since succession can be understood in terms of *earlier than* – X and Y are successive iff one is earlier than the other – I ground *earlier than* rather than the more general relation.

(Stage Precedence) A stage, X, is earlier than a stage Y iff [X exists] is entailed by some ersatz time,  $t_1$ , [Y exists] is entailed by some ersatz time,  $t_2$ , and  $t_1$  is ersatz earlier than  $t_2$ .

Succession is grounded in the genuine relation of ersatz *earlier than* which relates various ersatz times. Ersatz times and other propositions are not counterexamples to the thesis of presentism: as I said, they are either non-temporal or always exist. Therefore, the obtaining of succession relations between stages can be understood in a way that is consistent with presentism.

The account of resemblance builds on the account of succession.

(Presentist Resemblance) Stage X resembles stage Y iff there is some property, F, and there are ersatz times,  $t_1$  and  $t_2$ , such that  $t_1$  entails [X is F] and  $t_2$  entails [Y is F].<sup>12</sup>

This account assumes the plausible idea that resemblance is to be understood in terms of the sharing of a property (Armstrong, 1989, p. 96). It adds that the each of the resembling items is located and has the shared property at a certain time. Finally, it explains the relation of the entity to a time in terms of the relationship between an ersatz time and a proposition about the entity's exemplifying the property. None of the entities involved in the grounding fact – the ersatz times  $t_1$  and  $t_2$  and the propositions [X is F] and [Y is F] – is temporal and non-present. Therefore, the account is completely consistent with presentism.

Finally, there is the causal connection between stages. Given the framework of ersatz times, an appealing alternative available to the presentist is to understand causation in a Humean spirit. The standard Humean view understands causation as reducible to succession and certain general facts.

(Humean Causation) X caused Y iff (a) X is earlier than Y; (b) there are kinds F and G, such that X is F, and Y is G; and (c) every F is earlier than a G.

A Humean account of causation in the context of ersatz times goes as follows.

(Presentist Humean Causation) *X* caused *Y* (where *Y* is present and *X* past) iff (a) [*X* exists] is entailed by  $t_1$ , [*Y* exists] is entailed by  $t_2$ , and  $t_1$  is ersatz earlier than  $t_2$ ; (b) there are kinds *F* and *G*, such that  $t_1$  entails [*X* is *F*] and  $t_2$  entails [*Y* is *G*]; (c) any **time** that entails [Something is *F*] is ersatz earlier than a **time** that entails [Something is *G*]; and (d)  $t_2$  obtains.

(a) Accounts for the fact that *X* is earlier than *Y*. (c) Says that any ersatz time when something is *F* – i.e. [Something is *F*] is true – is earlier than an ersatz time when something is *G*. Since every *F* occurs at a time, (c) captures every *F*. And it guarantees that each time that involves an *F* is followed by a time that involves a *G*. Since the elements of the grounding fact are propositions and relations between them, nothing in this Humean account of causation requires a relation to something that does not exist.

Bringing together the accounts of resemblance, succession, and causation, the temporal counterpart relation between stages *X* and *Y* can be grounded in the fact that:

(Presentist Temporal Counterparts) *Y* is a temporal counterpart of *X* iff (a) there are times  $t_1$  and  $t_2$  such that  $t_1$  is ersatz earlier than  $t_2$ ; (b)  $t_1$  entails [*X* exists] and  $t_2$  entails [*Y* exists]; (c) there is some property, *F*, such that  $t_1$  entails [*Y* is *F*] and  $t_2$  entails [*X* is *F*]; (d) there are kinds, *G* and *H*, such that  $t_1$  entails [*X* is *G*] and  $t_2$  entails [*Y* is *H*]; and (e) any **time** that entails [Something is *F*] is ersatz earlier than a **time** that entails [Something is *G*].

If this is right, then the relations involved in accounting for the temporal counterpart relation can be understood in terms that are consistent with a presentist ontology. Thus the combination of presentism and stage theory does not entail the problematic consequence that existing things stand in relations to things that don't exist.

Benovsky's objection to the combination of presentism and worm theory rests on the same problematic assumption that the conjunction involves commitment to relations between present and non-present things cannot be accommodated within a presentist ontology. He reasons as follows. A worm that exists now is a present object composed mostly of things that are not present. Since non-present things are not real, given presentism, it seems to follow that for presentism a present worm is composed of many things that do not exist. But 'how is it possible to claim that material objects can have temporal parts at other times than the present if these parts don't exist?' (Benovsky, 2009, p. 297) In rejecting this possibility, Benovsky appeals to Trenton Merricks's principle that 'an object cannot have another object as a part if that other object does not exist' (Merricks, 1995, p. 524; cited at p. 297).

Consider Merricks's principle: an object cannot have another object as a part if that other object does not exist. Why is it that an object cannot have another object as a part if that other object does not exist? A natural answer is that *being a part of* is a relation, and an existing thing cannot stand in a relation to a non-existing thing. If the present thing persists, then some of its parts must not be present, which would seem to imply, given presentism, that some things that do not exist stand in the *being a part of* relation to something that exists. But, as I have suggested, presentists are well-placed to understand at least some inter-temporal relations in presentist-friendly ways. Indeed, the relations I have accounted for – causation, resemblance, and succession – are the very ones that are supposed to be the 'glue' (Benovsky, 2009, p. 301) that holds worm parts together. (Since composition can be understood in terms of being a part of, I will speak interchangeably of grounding parthood and composition. Similarly, I assume that if composition is problematic for presentism, it is because of its connection to parthood.) Thus the truth that some instantaneous stage, X, is a part of a worm, Y, can be grounded as follows.

(Presentist Worm Composition) Stage X is a part of a worm, Y, iff X stands to each of some stages  $Z_1, Z_2, \dots, Z_n$  in the appropriate causal, resemblance, and succession relations; and (b) nothing stands in the appropriate causal, resemblance, and succession relations to each of  $Z_1, Z_2, \dots, Z_n$  unless it is among  $Z_1, Z_2, \dots, Z_n$ .

Since the accounts of causation, resemblance, and succession above do not require any relation to a non-present thing, neither does this account of worm composition.<sup>13</sup>

If the objection to presentist worm theory is based on a concern about how a presentist can handle apparent relations between present and non-present things, then the concern can be answered. Benovsky, however, says that the problem with presentist worm theory is 'different but parallel' (Benovsky, 2009, p. 301) to the one faced by presentist stage theory. What is this different problem? Benovsky does not say, but it may be that composition is a relation which, unlike the others, resists treatment in the ways proposed by presentists to handle other apparently inter-temporal relations. Indeed, while presentists have attempted to ground causation, resemblance, and succession in facts congenial to their view, the same has not been tried for composition. If composition were special in this way, then presentist worm theory would raise problems that are specific to that combination, since presentists as such may not need to say that there are any objects composed of non-simultaneous things.

Why would inter-temporal composition be especially problematic for presentists? One hint we get of an additional argument is this: 'the objects (temporal parts) that compose another object (the whole Sam) exist only

one after another, and so fail to ever make up the whole, as they should' (Benovsky, 2009, p. 298). Benovsky's argument seems to be this.

- (1) Suppose the Xs are non-simultaneous temporal stages.
- (2) In order for the Xs to compose something, Y, there must be some time, t, such that the Xs compose Y at t.
- (3) If the Xs are not simultaneous, then there is no time when the Xs compose something.
- (4) Therefore, there is no thing, Y, which is composed by the Xs.

Benovsky's condition (2) is plausible. Unless the composition of Y by the Xs is a timeless fact, it must be the case that there is some time when the Xs compose Y. Even if there may be timeless composition among some things, clearly the composition between stages and worm is an affair that takes place in time. If the argument is to be resisted it must be at step (3). Why think (3) is true? The assumption of (3) must be a principle to the effect that the Xs compose Y at t only if the Xs all exist at t. Since there is no instant<sup>14</sup> when the Xs all exist, the presentist would need to deny that the Xs ever compose Y.

But how is the principle to be understood exactly? On one interpretation, the principle holds that:

- (3a) The Xs must be located at t in order to compose something at t.

But on this interpretation worms are impossible even on eternalism. Since the Xs are not simultaneous, there is no time when they are all located to compose the worm, even given the view that the past and future exist as much as the present. Another interpretation is that:

- (3b) If the Xs compose something, then there must be some time, t, when it is the case that the Xs exist, whether or not they are located at t.

This interpretation is consistent with eternalist worm theory, which claims of some things that aren't located at a given time, t, that it is true at t that they exist *simpliciter*. And this interpretation does rule out presentist worm theory, since there is no time at which it is true to say that the Xs exist, since, on presentism, it is true at a given time that something exists only if that thing is either timeless or exists at that particular time. But on this interpretation the argument simply assumes that presentism cannot account for composition in terms that are congenial to its ontology. Imagine a parallel argument for the conclusion that, given presentism, non-simultaneous things cannot resemble. The parallel version of (3) would say that:

- (3c) Some things can only resemble at  $t$  if it is true at  $t$  that those things exist.

That argument, and this principle, can be resisted by the sort of account developed earlier, according to which resemblance is not a straightforward relation between the resembling items. The argument about composition offers no reason why composition, like resemblance, could not be understood in a way that would allow for the possibility that what grounds the truth that non-simultaneous things compose something is a fact that does not involve those non-simultaneous things standing in a straightforward composition relation.

The specific problem with accounting for inter-temporal composition in a presentist context might be thought to arise from the supposed fact that a sum is 'nothing more than' its parts. Sometimes Benovsky hints at this idea, as when he says that the worm Sam is an '*aggregate* of his parts' (Benovsky, 2009, p. 298; italics added). How would this argument go? A composite might be 'nothing more than its parts' in the sense that the composite is identical with its parts (Baxter, 1988). The worm sum,  $Y$ , on this suggestion, is identical with its stage parts, the  $X$ s. Since  $Y$  is identical with the  $X$ s, and  $Y$  exists, it seems to follow by Leibniz's Law that the  $X$ s exist. But then it is hard to resist the inference that if the  $X$ s exist then each of the  $X$ s exist, even the non-present ones. Can this step be resisted? It seems  $X_1, X_2, \dots, X_n$  exist iff there is something,  $Y_1$ , which is identical with one of the  $X_1, X_2, \dots, X_n$ , something,  $Y_2$ , that is identical with another  $X_1, X_2, \dots, X_n$ , and so on for all the  $X_1, X_2, \dots, X_n$ . That is, *there is* something,  $Y_1$ , that is identical with  $X_1, X_2, \dots, X_n$ ; such a  $Y_1$  must be real. Since many of the  $X_1, X_2, \dots, X_n$  are not present it seems to follow that one of these  $Y$ s is also not present. The strategies proposed to handle resemblance, causation, and succession do not seem promising for these identity relations. In those cases, the thought was to find a truthmaking fact for true claims about the resemblance, causation, and succession between present and non-present things that did not require the existence of the non-present thing. In each case, the truthmaking fact tracks the way the relevant relation works. But what truthmaking fact could track the way that identity works? The best bet would be to ground identity in complete resemblance:

(Presentist Identity)  $X$  is identical with  $Y$  iff they resemble completely.

Since resemblance can be grounded in presentist-friendly facts, this would make it possible to ground the identity between  $X$  and  $Y$  in presentist-friendly facts. And this in turn might make it possible to ground the identity between  $X$  and its parts in presentist-friendly facts.

But there are well-known problems with grounding identity in complete resemblance, most famously the fact that it seems possible for different

things to resemble completely.<sup>15</sup> Nonetheless, there is little reason for the presentist to worry about this iteration of the objection. What the objection now amounts to is that presentism cannot be combined with worm theory *on the assumption that composition is identity*. The objection is that presentism, worm theory, and composition as identity cannot be combined. While there is some reason to think that is true, there is little reason to believe that the composition as identity view deserves to be taken as the sort of obvious truth any philosopher should accept, on par with the claim that existing things cannot be related to non-existing things. This version of the objection can be comfortably resisted by denying that composition is identity. Furthermore, composition as identity seems to be a dubious doctrine for many reasons, which makes the price of this denial all the less significant.<sup>16</sup>

Benovsky's arguments against presentist perdurantism do not succeed. The relations required to understand the temporal counterpart relation among stages or the glue that makes worms out of stages can be accounted for in presentist-friendly ways. Holding that composition is special insofar as wholes are 'nothing but' their parts may imply that presentism is incompatible with worm theory. But the presentist can unabashedly deny that composition is identity, particularly since composition as identity is in itself beset by serious problems. I conclude, therefore, that Benovsky does not succeed in showing that presentism is incompatible with perdurantism, either of the stage or worm variety. I now turn to Benovsky's account of presentist endurantism.

## II.

Having argued that presentists cannot accept either version of perdurantism, Benovsky proceeds to argue that presentists are further boxed in because they can only accept enduring objects construed as thick particulars made up of substrata which exemplify properties construed as universals. Bundles of properties are out, as are tropes.<sup>17</sup> I turn now to Benovsky's arguments for these views.

On the bundle theory, 'Sam is a bundle of properties (all of his time-indexed properties) united by a special primitive relation often called consubstantiation or compresence' (Benovsky, 2009, p. 305). Sam is the bundle that includes such properties as bent-at- $t_1$ , bent-at- $t_2$ , straight-at- $t_3$ , straight-at- $t_4$ , and so on including all the properties that are indexed to all the times when Sam exists. On the substratum theory, Sam's 'properties inhere in a substratum that exemplifies them and unites them in order to make a (thick) particular' (Benovsky, 2009, p. 306). Sam is not the substratum, however. He is the 'thick particular' that includes the substratum and properties as elements. The terminology is due to Armstrong, who

construes thick particulars, and thus ordinary objects, as states of affairs (Armstrong, 1989). As with the bundle theory, on the substratum view the properties that come together to constitute Sam include any time-indexed properties Sam ever exemplifies.

Let us examine Benovsky's argument for the view that the properties exemplified by enduring particulars must be universals. He begins by assuming that properties are universals if they are not tropes (Benovsky, 2009, p. 307). He then argues that the properties bundled together or inhering in substrata cannot be tropes. His argument that the properties are not tropes, in full: 'tropes are spatio-temporal entities that are located at the places and times when they are exemplified, and so if properties were tropes here, we *would* have the troubles the worm view has, since at the present time  $t_5$ , the trope "being-bent-at- $t_2$ " does not exist, and under presentism this means that it does not exist full stop' (Benovsky, 2009, p. 307).

The argument seems to be this:

- (1) Tropes exist only at the places and times when they are exemplified.
- (2) A composite object cannot have something which does not exist as a part.
- (3) Sam, who exists at  $t_5$ , is a composite of properties, some of which are indexed to times other than  $t_5$ .
- (4) Properties with indices other than  $t$  do not exist at  $t$ .
- (5) By presentism, if  $t$  is present, then properties indexed to times other than  $t$  do not exist, period.
- (6) Therefore, the properties that compose Sam at  $t$  are not tropes.

Since any (persisting) object that exists at  $t$  will be composed of some properties with indices other than  $t$ , the argument is supposed to generalize to any persisting object. To carry through the analogy with the objection to presentist worm theory, I take Benovsky to suppose that bundles of properties and thick particulars are composites of their properties (and in the case of the thick particular, the substratum). Some philosophers have resisted a compositional conception of bundle or substratum theory. Armstrong, for example, thinks the relationship that binds properties and (in his language) a thin particular into a thick particular is not composition but constituency (Armstrong, 1997, p. 119). I will not quibble about construing bundles of properties and thick particulars as composites of their elements. It should be noted, however, that even granting all of Benovsky's premises, at best his conclusion would be that a persisting object that exists at  $t$  is not a composite of any tropes indexed to times other than  $t$ . The argument is consistent with the claim that properties with a  $t$ -index and those that lack an index that are exemplified at  $t$  are tropes.<sup>18</sup> But I'm not interested in pursuing that issue, either. Finally, I will not

pursue a presentist attempt in the spirit of the effort in connection with worms to ground the composition of Sam by his properties in a way that does not require all of his properties to exist.

Instead I want to focus on (4). Why should we suppose that properties with indices other than  $t$  are not located at  $t$ ? Benovsky does not say, but a tempting suggestion is this. If  $F\text{-at-}t_2$  is located at  $t_1$ , then the time  $t_2$  must be located at  $t_1$ . But since obviously  $t_2$  cannot be located at  $t_1$ ,  $F\text{-at-}t_2$  can't be located at  $t_1$ .

I will concede for the sake of the argument that the existence of  $F\text{-at-}t_2$  at  $t_1$  implies the existence of  $t_2$  at  $t_1$ . What I want to question is the next move: the claim that  $t_2$  does not exist at  $t_1$ . It may seem like plain common sense that 2042 cannot exist in 2010. If it did, that would mean 2010 is simultaneous with 2042, which would seem to imply that the events of 2042 are simultaneous with the events of 2010. But I propose that ersatz times are of use in showing that  $t_2$  – the ersatz time – does exist at  $t_1$ . We need to recall here the distinction between a concrete time and an ersatz time (Markosian, 2004, p. 76). Concrete 2010 is the collection or sum of events that are going on now. Ersatz 2010 is the maximal consistent proposition that describes all and only those events going on now. It would be a problem if the presentist trope theorist were forced to say that concrete  $t_2$  exists at  $t_1$ . But if the  $t_2$  in  $F\text{-at-}t_2$  is the ersatz time, and  $t_1$  is the concrete time, then it is possible that  $t_2$  exists at  $t_1$ .

What is it for ersatz  $t_2$  to exist at  $t_1$ ? First, I take ' $t_1$ ' in 'exists at  $t_1$ ' to be the concrete time, the sum of concrete events.  $t_2$  exists at  $t_1$  iff the existence of  $t_2$  is among the events<sup>19</sup> that make up  $t_1$ . Put another way,  $t_2$  exists at  $t_1$  iff  $t_1$  entails the existence of  $t_2$ .  $t_1$  obtains iff concrete  $t_1$  occurs. Since the concrete events entailed by  $t_1$  are precisely those that exist given that  $t_1$  obtains, the existence of  $t_2$  is among the events that make up  $t_1$  iff the existence of  $t_2$  is among the events entailed by  $t_1$ . Since  $t_2$  exists at  $t_1$  in the sense that ersatz  $t_2$  exists at concrete  $t_1$ , ' $t_2$ ' in ' $F\text{-at-}t_2$ ' refers to ersatz  $t_2$ . Accordingly, ' $x$  is  $F\text{-at-}t_2$ ' means:  $t_2$  entails [ $x$  is  $F$ ].<sup>20</sup>

According to this proposal, the existence of the proposition that is  $t_2$  is among the concrete events that make up concrete  $t_1$ . This requires that an ersatz time be temporal in somewhat the way that events are temporal. I suggest that the maximal propositions that are ersatz times are omnitemporal – existing at all times – rather than timeless. The point of their abstraction is that propositions are always available to provide truthmakers for truths that make trouble for presentists. One way to fill this role is by being timeless. But being omnitemporal makes them equally available to ground problematic truths. If every ersatz time is omnitemporal, then every ersatz time is located at every other. The proposal does require that Crisp's suggestion that ersatz precedence is precedence (Crisp, 2007, p. 102) must be rejected. On Crisp's suggestion if  $t_1$  is ersatz before  $t_2$ , then  $t_1$  is simply before  $t_2$ . But if that is right, then  $t_2$  cannot also be temporally

located at  $t_1$ . But denying the identity of precedence and ersatz precedence is not a great cost, since Crisp admits that the ersatz theory he offers does not require that ersatz precedence be precedence, but only that it fill the same metaphysical role.

Premise 1 also asserts that tropes are located at the places where they are exemplified. It may seem similarly problematic to hold that times are located where properties indexed to them are located. I suggest that  $t_2$  is located at any place where F-at- $t_2$  is located. Any given time is typically the index of many properties. And typically those properties are exemplified by many things at any given time. The class of resembling tropes that includes F-at- $t_2$  likely includes many others exemplified by different things at  $t_1$ . Since these different things are typically at some distance from each other, it follows from the account suggested that  $t_2$  is located at a variety of different places at  $t_1$ . Is this a problem? A number of metaphysical views have the consequence that multiple location is possible and a number of attempts have been made to make sense of it.<sup>21</sup> I will not add to those discussions here, other than to say that if multiple location is metaphysically benign for universals then it seems to be similarly innocuous for propositions.

Benovsky's argument that the properties of enduring particulars cannot be tropes does not succeed. Having argued that these properties must be universals, Benovsky proceeds to argue that this implies that enduring particulars cannot be bundles of properties, but must rather be substrata combined with universals. These are understood to be platonic universals, which have no location in space or time. In addition to concerns about the identity of indiscernibles, Benovsky mentions the following reason for rejecting this bundle view: the bundle of platonic universals view would 'mean that objects like Sam or a table are *unlocated*, since they would *be* no more than bundles of unlocated properties' (Benovsky, 2009, p. 307). The argument seems to be this. First, the properties in the bundles that are particulars are unlocated universals. Second, particulars are 'no more than' bundles of such unlocated properties. Therefore, these particulars must be unlocated themselves. The first premise simply spells out the assumption that enduring particulars are bundles of platonic universals. The second premise seems to assume that a 'bundle' of properties would owe all of its properties to the properties of the properties that make it up. Thus if the bundle is made up of properties all of which are unlocated, then the bundle must itself be unlocated. The assumption seems to be that a bundle of properties is a heap or aggregate of properties which has no character of its own other than that of its property elements. But there is no reason to suppose bundles of properties must be construed in this way. They may be understood on the model of ordinary composites, which need not exemplify properties that are exemplified by all of their parts. Understanding the bundle theory on the heap model makes it hopeless even if the

property elements are supposed to be tropes. On the trope view, all the properties that make up the bundle are properties. Since the particular is ‘no more than’ the bundle of properties, it should similarly follow that the particular is a property.

I conclude that Benovsky’s efforts to raise the price of presentism are unsuccessful. Whether presentism is a good bargain at its actual price is a question for another day.<sup>22</sup>

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#### NOTES

<sup>1</sup> See Markosian, 2004. The qualifier ‘temporal’ is important. As we will see below, presentism may allow, and indeed appeal to, a realm of non-temporal entities.

<sup>2</sup> See Merricks, 1995; 1999b.

<sup>3</sup> See Merricks, 1995; Carter and Hestevold, 1994.

<sup>4</sup> These definitions follow Benovsky’s (see 2009, pp. 293–4 for worm theory; p. 300 for stage theory).

<sup>5</sup> I say ‘usually’ since self-visiting time-travelers would have simultaneous stages.

<sup>6</sup> See De Clercq, 2006, for discussion and references.

<sup>7</sup> See Bigelow, 1996; Crisp, 2005; De Clercq, 2006; Davidson, 2003; and Chisholm, 1990. Other approaches are also available. Brogaard, 2006, suggests that a non-existent thing can stand in relations, as long as the relation is tensed. Sider, 1999, suggests on behalf of the presentist that statements describing apparent relations between present and past things are not true but ‘quasi-true.’

<sup>8</sup> A proposition, P, is grounded in or made true by something, X, iff the existence of X entails the truth of P.

<sup>9</sup> It will be understood here and below that, unless otherwise noted, I describe something as a ‘relation’ even if on the presentist ontology facts involving it are not relational in character.

<sup>10</sup> One might try defining an ersatz time as a maximal set of propositions. Although defining an ersatz time this way has the virtue of explicitly displaying the internal structure of a time and of avoiding this unusual use of ‘consistent,’ it suffers from several defects. One is that sets, unlike propositions, are not naturally said to be true or obtain. It is important that ersatz times may or may not obtain or be true. Relatedly, sets, unlike propositions, cannot naturally be said to entail each other. Again, it is important that there be a logical connection between a time and the events ‘within’ it.

<sup>11</sup> On this account the crucial difference between maximal propositions that are ersatz times and those that are not is that the former but not the latter stand in ersatz succession relations to each other. This is not the less illuminating account that the former differ from the latter because the former but not the latter represent actual events. Thanks to a referee for making me think more carefully about this and the material in the previous note.

<sup>12</sup> Compare de Clercq, 2006, pp. 388–389.

<sup>13</sup> Since composition can be grounded in *being a part of* in the standard way (see van Inwagen, 1990), if *being a part of* can be given a presentist-friendly gloss, then so can composition.

<sup>14</sup> There may be non-instantaneous times when the Xs all exist to compose Y. Accordingly, I interpret the principle as restricted to instantaneous times, and will have them in mind when I speak of ‘times.’

<sup>15</sup> See Black, 1962.

<sup>16</sup> For some of the more trenchant objections to composition as identity see Sider, 2008, and Merricks, 1999a.

<sup>17</sup> Benovsky does not define either ‘trope’ or ‘universal’; the only significant difference between them concerns whether each can exist without existing at a certain time and place. Benovsky assumes that a universal can while a trope cannot. Further implications of the distinction between tropes and universals are not significant.

<sup>18</sup> The argument also does not seem to touch the possibility that properties are tropes on another of the conceptions Benovsky considers. In addition to thinking of the properties of an object as indexed to times, Benovsky thinks one might index properties to the present (Benovsky, 2009, p. 303). Thus Sam has the property was-bent-1-second-ago, will-be-straight-in-1-second and so on. Some substitute for (4) would need to rule out the existence of was-bent-1-second-ago now. It is hard to see what that would be.

<sup>19</sup> I use ‘event’ in the liberal sense that includes fairly permanent states.

<sup>20</sup> A referee objects: ‘The suggestion seems to be at least that all of the world’s history is represented at a given time. But then the question is what grounds those representations? Where have they come from? How do today’s representations manage to guarantee what actually happens tomorrow?’ To be clear, what I describe is largely standard ersatz doctrine. As Bigelow notes, on a presentist picture it is possible ‘[a]t any time . . . [to] collect all the truths about what was, is or will be’ (Bigelow, 1996, p. 47). This is possible because on the ersatz picture they are all there to be collected. This is to be expected from the usual analogy between presentism and ersatz possible worlds. As an ersatz possible world includes all the others which do not obtain, so an ersatz time contains all the others that do not obtain. The only advance on Bigelow is that I explicitly think of these proposition as temporal. One way to take the concern about where these temporal propositions come from and how they guarantee the future is as a worry about their causal status. Are these propositions part of the causal stream? Bigelow (p. 47) proposes that they are – indeed that only propositions are relata of causal relations. But it is also feasible to hold that propositions are temporal but not causal – like universals on the view that the relata of causal relations are states of affairs which include properties as constituents (Armstrong, 1989).

<sup>21</sup> See McDaniel, 2003; Hudson, 2005; and Gilmore, 2003.

<sup>22</sup> Thanks to David Taylor, Trenton Merricks, and a referee for helpful comments on an earlier draft.

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