

Are the Bundle Theory and the Substratum Theory Really Twin Brothers?

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Abstract In a recent paper, Jiri Benovsky argues that the bundle theory and the substratum theory, traditionally regarded as ‘deadly enemies’ in the metaphysics literature, are in fact ‘twin brothers’. That is, they turn out to be ‘equivalent for all theoretical purposes’ upon analysis. The only exception, according to Benovsky, is a particular version of the bundle theory whose distinguishing features render unappealing. In the present reply article, I critically analyse these undoubtedly relevant claims, and reject them.

Keywords Bare particular · Substratum · Compresence · Ontology · Equivalence · Property · Identity · Individuation · Haecceitism · Identity of the Indiscernibles · Perdurantism · Endurantism

1 Introduction

In his (2008), Jiri Benovsky argues as follows. We do not know anything about compresence relations and bare particulars (the peculiar entities postulated by bundle theorists and substratum theorists, respectively) except for what they do, that is, their *theoretical role*. Hence, compresence relations and bare particulars are both *theoretical entities*, entirely defined by such role. However, (i) *the postulated theoretical role is exactly the same for bare particulars and compresence relations*, and so the bundle theory and the substratum theory are equivalent (in a sense to be specified). When properties are regarded as tropes, says Benovsky, the bundle theorist and the substratum theorist cannot differentiate their views: if one has a problem, the other has to face it too; and the solution one has at his/her disposal for

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solving the problem is identical, *mutatis mutandis*, to the solution available to the other. When properties are intended as universals, moreover, either the two theories are again equivalent; or (ii) they are different, but only insofar as the bundle theory is formulated in a version that turns out to be independently unpalatable.

Benovsky's contention is clearly an important one. If it were compelling, it would deflate the significance of a central debate in metaphysics, concerning whether or not something over and above properties needs to be posited in one's ontology. However, I will argue in what follows that Benovsky's conclusions are unwarranted. I will maintain that an important point of at least *potential* disagreement between the bundle theory and the substratum theory concerns individuation; and that, whatever one makes of this, there is another compelling reason for regarding Benovsky's conclusion (i) as incorrect, having to do with the 'concreteness' of the posited entities. As for (ii), I will claim that there are grounds for disagreeing with it as well, because the bundle theory doesn't have the consequences that Benovsky presents it as having.

2 Compresence, Substrata and Properties

In the first two sections of his paper, Benovsky defines the substratum and the bundle theory, and individuates the alternatives to be discussed. The substratum theory is the view that there are '*bare*' *particulars* that bear properties and properties exemplified by such particulars. Depending on whether the latter are tropes or universals, one has either what Benovsky labels STT (substratum theory with tropes) or what he dubs STU (substratum theory with universals). The bundle theory is, instead, the theory that denies the existence of (and the need for) bare particulars as supports for properties, and makes do with a special relation—*compresence*—that holds properties together. Benovsky defines three possible bundle theories: the bundle theory with tropes (BTT) (which assumes compresence to also be a trope), the bundle theory with universals with compresence as a numerically distinct relation for each object (BTU₁), and the bundle theory with universals with compresence as one and the same—i.e., numerically identical across its instances—variably polyadic relation for all objects (BTU₂).¹

3 Tropes

In sections 3–8, properties are assumed to be *tropes*. In sect. 3, Benovsky points out that both BTT and STT account for the inner unity of individual objects by positing

¹ Of the bundle theory with tropes with compresence as the same (variably polyadic) relation for all objects, Benovsky says that it is "not really available" (2008; 179). But it certainly is a possibility, for compresence may be a universal even if all other properties are tropes (note that Benovsky accepts the converse, i.e., BTU₁).

a primitive unifying ‘device’: a bare particular (or ‘substratum’)² and an instance of the compresence relation, respectively. In sect. 4, Benovsky rejects the idea that compresence relations are distinguished from bare particulars by the fact that they are one of the bundled properties. His claim is that if compresence were one of the bundled properties there should be another compresence relation bundling it together with the other properties. And for this additional compresence relation the question of whether it is part of the bundle or not would arise again. At some point, therefore, a compresence relation which is not one of the bundled properties must be postulated anyway, on pain of giving rise to an infinite regress. In sects. 5–7, Benovsky contends that BTT can account for change in both a perdurantist and an endurantist framework,³ and does this in exactly the same way as STT: i.e., by postulating a numerically unique entity that acts as a unifying factor and remains the same, either at each time-stage or across the entire history of the object it is a constituent of. This is all convincing.

In sect. 8, though, more controversial claims start to be made. Of the bundle theory, Benovsky says that it does not entail that every property of an object is essential to it: because compresence, again in the same way as a bare particular, can connect different properties at different times. Certainly, though, the following seems to be the case: compresence being an at least binary relation, each actual compresence relation must connect at least two properties at any given time⁴; bare particulars, instead, *may* not exemplify any property at all. Benovsky’s opinion about this latter possibility transpires from his claim that

“If what individuates [a...] particular [...] is *only* the substratum (which would be a strange view anyway) then it has all its properties essentially, since it doesn’t have any” (2008; 182).⁵

The idea seems to be that, even conceding that compresence relations bind the properties they bind at each moment in time necessarily, an analogous claim of necessity can be made for bare particulars.

There are two parts to Benovsky’s claim, and two points to be made concerning it. First, it is certainly relevant whether the number n of properties possessed essentially is such that, necessarily, $n > 2$ (bundle theory) or n can be 0 (substratum theory with bare particulars as the sole individuator). For, whenever $n = 0$, the condition is only satisfied *vacuously*. This means that if a concrete particular is individuated by a bare particular only, it can in fact come to possess—or lack—any property at any time and still remain that specific particular. For an example (which

² Unlike Benovsky, who mostly uses the term ‘substratum’, I will stick to ‘bare particular’ in what follows, which I find more appropriate. I am sure Benovsky and I nevertheless refer to the same concept.

³ Roughly, perdurantism has it that objects have temporal parts while endurantism is the thesis that they are ‘fully present’ at each moment of their existence.

⁴ An ‘ontological structuralist’ of sorts could suggest that relations may exist without relata and so nothing about the existence of properties is entailed by the holding of a compresence relation. However, this conception surely is a contentious one which, I suspect, Benovsky would rather steer clear of.

⁵ Benovsky also says that if what individuates a concrete particular were all its properties and the unifying factor *together*, then both the bundle and the substratum theory would have the consequence that if one takes one property away one doesn’t have the same particular anymore.

is Benovsky's example), think of Cyrano and his distinctive big nose. Provided that Cyrano's identity is exclusively grounded in a bare particular, Cyrano could *at any time* lose the property of having a big nose, and still be Cyrano. In fact, he could remain Cyrano *while losing all his properties*. This is not true if Cyrano is a bundle of properties, though, for then—as argued—at least two properties are essential for his existence at each point in time,⁶ and so there never is a bare 'Cyrano'. This difference between the two views emerges most perspicuously in the case of the bundle theory framed in a perdurantist context, where objects are—as Benovsky puts it—'bundles of bundles'. Since perdurantism has it that each one of the bundled bundles (i.e., time-indexed 'object-slices') is necessarily (and exclusively) constituted by the properties the object has at that point in time, and there is nothing more to the object than its time-slice, it follows on this construal that each object is necessarily constituted by all the compresent properties it has at each point in time.

The key point is, of course, whether individuation *can* be via bare particulars only. Benovsky does not say anything about this other than what appears in the remark into parentheses in the above quotation: that if the bare particular were the only source of individuation this would be a 'strange view'. This is the second element in his remark that deserves attention. What is this intended to mean? It seems that Benovsky's claim amounts to a rejection of 'truly bare particulars':⁷ the idea of a bare particular existing without properties, Benovsky appears to think, is either unappealing or inconsistent, and it can, therefore, be discarded without much ado. Hence, bare particulars too necessarily have a number $n > 0$ of properties attached to them, and individuate together with these.

This is indeed a common claim in the metaphysics literature, at least since Moreland (1998). Moreland was the first explicitly to argue that for the concept of a bare particular not to be inconsistent, the latter must be thought of as necessarily possessing properties. More recently, Sider went as far as to say that, despite the fact that it must be thought of in abstraction from the properties it exemplifies,

“[t]he *intrinsic nature* of a thin [=bare] particular is given by the monadic universals it *instantiates*”. (2006; 389, italics mine)

However, the question whether truly bare particulars (can) exist is far from having been given a conclusive response along the Moreland-Sider line.

First, Moreland's claims are based on the assumption of a theory of existence as the possession of properties that can be questioned, and certainly appears 'too easy' in the present context. Secondly, the positing of a link of necessary coexistence between bare particulars and properties may give rise to doubts about the very distinction between them as separate ontological categories: couldn't one take them to always exist together because merely distinguished conceptually, and consequently opt for a one-category ontology along the lines of resemblance nominalism

⁶ Although not at *all* times. It is important to notice this difference between the notion, being discussed here, of a property *possessed essentially*, and the traditional notion of an *essential property*.

⁷ Benovsky has confirmed the correctness of this interpretation, and his sympathy for Sider's position—mentioned below—in private communication.

or the Aristotelian theory of substance?⁸ Third, and perhaps most importantly, the inconsistency objection can be resisted by simply saying that truly bare particulars are in fact conceivable because, although they do not instantiate any property, they do have logico-metaphysical features such as, for instance, being a particular or possessing primitive thisness.⁹

Notice that the (originally Lockean) idea that all knowledge is ultimately rooted in direct experience (the Russellian requirement of acquaintance) and the latter can only be experience of qualities, but we have no experience of things without any intrinsic property and so should discard the concept of a truly bare particular, is of no avail here. Such a strong understanding of Russell's principle of acquaintance as setting constraints on ontology was already put into doubt in the 1960s¹⁰, and is certainly far from shared nowadays: for, in what sense are we acquainted with tokens of specific ontological categories? Moreland himself discards this line of argument as anachronistic (1998; 254).¹¹

One may argue that truly bare particulars must be regarded as real by the substratum theorist, but if something is real it exists in space and time, and enters therefore into physical relations, consequently coming to possess some properties after all. However, it looks as though, on the canonical understanding, space-time location is not a property to be possessed by particulars, but just an external relation (between material entities and either space-time points or other entities). Also, it does not seem that mere existence in space and time *entails* possession of properties: couldn't something just exist in space and time without coming to have any property due to interaction with other things? Of course, this is exactly the point of dispute. But, since the mere possibility of truly bare particulars is sufficient for drawing a distinction between bundle ontologies and substratum ontologies, the burden is on the opponents of truly bare particulars of showing that the true bareness of certain particulars is rendered impossible by their existence in space and time.

In general, it suffices for present purposes that it has not been *established* that bare particulars always exist with some (empirical) property and so always individuate in cooperation with these. For this appears to be the crucial working assumption in Benovsky's reasoning.

In connection to this, it is important to recognize that Benovsky *cannot* have recourse to an argument that may at first glance appear suitable for his purposes, i.e., one based on the implausibility of *strong* (or *extreme*) *haecceitism*. Strong haecceitism is, roughly, the view that there are purely numerical facts concerning the identity of things,¹² and scenarios are consequently possible such as two

⁸ Cfr. Loux (1978) and Rodriguez-Pereyra (2002).

⁹ These logico-metaphysical features are not properties that a bare particular may or may not have. They rather coincide with the bare particular's *mode of existence*. Without entering into the details of this, at any rate, it seems clear that Benovsky has in mind empirical properties in his discussion.

¹⁰ See, for instance, Clatterbaugh (1965).

¹¹ The insistence on acquaintance led the neo-positivists to the abandonment of metaphysics altogether. This is clearly not Benovsky's position.

¹² Weak haecceitism, instead, regards identities as primitives, but acknowledges that properties also play a role in individuation, which is what Benovsky seems to assume. For definitions, and discussions, see Adams (1979) and Elshof (2000).

individuals swapping all their properties and remaining those very individuals. For example, according to strong haecceitism there is a possible world in which, say, Socrates has all the properties of Aristotle but is the same individual as the actual Socrates and vice versa. Socrates and Aristotle are said to have ‘bare identities’. Clearly, if bare particulars act as the sole individuators of the objects they are constituents of, then things have bare identities and strong haecceitism holds. Were one not ready to endorse strong haecceitism, therefore, this would entail in turn that one should discard the very idea of a truly bare particular. However, first, unnatural as it may seem—especially when it comes to personal identity—, strong haecceitism is not an inconsistent philosophical doctrine. It has in fact been argued by some that it is a compelling view that we should endorse: Salmon (1996; 216) goes as far as to present a proof for it.¹³ More importantly, *it is not the case that strong haecceitism follows from the substratum theory and not from the bundle theory*. For the fact, acknowledged by Benovsky, that compresence may connect different properties at different times and still remain the same (remember that we are working here with BTT, i.e., with compresence as a trope), appears to point to the bare identity of the compresence relation. The crucial point here is that, as argued, compresence must necessarily connect at least two properties at each time, but which specific properties these are is left completely open.

I suggested that the first fact suffices for drawing a distinction between BTT and STT.

It could be objected that this criticism is not decisive, as it relies upon distinctions and concepts that are inherently obscure. I myself agree that, were the possibility of truly bare particulars the only peculiar feature of the substratum theory, Benovsky wouldn’t be given much pause for thought. Whatever one’s feelings are about this, however, there is another element, independent of the considerations just made, that counts—to my mind *decisively*—against Benovsky’s conclusion (i).

In sect. 8, Benovsky also claims that substratum theories are compatible with adverbialist endurantism¹⁴ only if they assume a time-indexed exemplification relation as a third entity in their ontology. And then he adds that, although in this version the substratum theory is different from the bundle theory, it is also unappealing because it posits an *additional* ontological category which is likely to fall prey of ‘Bradley-style’ regresses. Benovsky then remarks that the substratum theorist can avoid this problem by *refraining from reifying* exemplification,¹⁵ but then his/her theory is again indistinguishable from the bundle theory. However, suppose that one follows Benovsky in his suggestion that exemplification relations not be reified. *Why not do the same with compresence?*

¹³ For a critical reply, see Catterson (2008).

¹⁴ This is the view that objects possess contingent properties by possessing them ‘*x*-ly’, where *x* is a specific time.

¹⁵ Benovsky thus implicitly agrees that, since they belong to a different ontological category, bare particulars can plausibly be posited as entities capable of binding without being bound. LaBossiere (1994; 364) is an example of a substratum theorist who claims that it is possible to conceive of bare particulars as possessing primitively a ‘binding ability’ which is not itself a property to be ‘reified’ (exactly in the same way as they possess numerical identity primitively).

Some authors who support BTT, for instance Simons (1994) and Denkel (1997), do in fact suggest that what ties properties together in concrete particulars are not compresence relations to be thought of as additional entities over and above the properties, but *internal* relations of mutual existential dependence (where an internal relation is a relation that is immediately given, *without ontological addition*, once the relata exist). In short, this means to regard tropes as connected in complexes by ontological relationships that are necessarily determined by the tropes' intrinsic natures. Regardless of whether this can be extended to BTU,¹⁶ if compresence (or any other relation 'gluing' properties together) is an internal relation between properties at least for tropes, the claimed equivalence between the substratum theory and the bundle theory *disappears*: for *there is no way in which bare particulars can be regarded as entities whose reification can be avoided*. Indeed, they are thought of and postulated as essential 'ontological ingredients' over and above properties, and more or less identified with the 'material core' of any object that remains left once these are conceptually 'stripped off'. *If anything has a priority as regards qualifying as 'real stuff' in the substratum theory, this is certainly bare particulars.*¹⁷

Hence, Benovsky's own words suggest a(nother) fundamental ontological difference between (plausible versions of) the bundle theory and the substratum theory.

In view of the foregoing arguments, it looks as though sameness in theoretical role does not entail metaphysical equivalence as far as compresence relations and bare particulars are concerned. Although one can agree with Benovsky's point D. in Sect. 9 of his paper (both bare particulars and compresence relations are theoretical entities), C. (they play the same theoretical role *in the same way*) is incorrect. Bare particulars and compresence relations have the same explanatory role, but perform their work in significantly different ways. Therefore, what Benovsky defines as the 'strong conclusion', consisting of a claim of metaphysical equivalence (points A. and B.), does not stand.

Benovsky, however, prudently endorses a weaker conclusion of epistemic underdetermination in his paper: is it not the case, he asks, that even if the two alternatives are not metaphysically equivalent, there is no way of choosing among them on the basis of the evidence? This is a more subtle claim that may at first appear justified.

However, it seems to me that this conclusion too can be questioned. Ontological views are constructed with the aim of explaining the empirical evidence available to

¹⁶ This could be doubted on the basis that, since universals are numerically identical across instances, it would mean that every instance of a given universal should be necessarily co-exemplified with all the instances of the universal(s) with which it is co-exemplified once. Alternatively, one should justify the claim that different instances of the same universals (can) enter in different internal relations, which is likely to require one to attribute unique individuating features to instances of universals, which cannot be done within BTU as it is traditionally formulated. At any rate, I will argue in what follows that there are other reasons for claiming that BTU (more precisely, BTU₂) is different from STU while not being unappealing.

¹⁷ It is, therefore, telling that in footnote 7 of his paper Benovsky mentions and discards without argument Simons' trope theory.

us, and of course there is only one set of facts to be explained. *Provided* that two are ontologies equally efficacious, this means that they *must* be ‘empirically indistinguishable’. Perhaps Benovsky has in mind that the bundle theory and the substratum theory are equally capable of explaining the evidence and, *additionally*, have no consequence whatsoever for *our ontological interpretation* of the evidence itself that can discriminate between them. However, the earlier discussion of individuation and haecceitism goes to show that there is no underdetermination in this sense between substratum and bundle theories. For, there are points with respect to which the two theories do differ, if only at the level of possibilities open in each of them.

For an analogy, think of (allegedly) empirically equivalent scientific theories such as, for example, orthodox quantum mechanics (QM) and Bohmian mechanics (BM). QM and BM are generally taken to be different theories by physicists, and both regarded as plausible explanations of the observed evidence. However, QM and BM are *expected* to say the same things about reality (the latter was in fact more or less *constructed* to be equivalent to the former). Does this mean that there is no point in choosing to work with QM rather than BM or vice versa? No physicist will answer in the affirmative. Indeed—at least if they have a philosophical tendency and are not instrumentalists—they will probably argue in favour of one of the alternatives by pointing out how superior their theory of choice is with respect to the interpretation of reality (and, probably, as regards certain pragmatic virtues). One could point out that ‘crucial experiments’ are possible in the empirical sciences, and this makes the latter unique, so undermining the analogy. But could not the metaphysician allow for future ‘crucial arguments’ (so to call them) enabling one to decide among the currently underdetermined alternatives? Perhaps an inconsistency will be found in the bundle theory or in the substratum theory in the future, which will clearly make it as unworkable as a refuted physical theory.

If this is correct, Benovsky’s weaker claim of equivalence as empirical underdetermination can be rejected, as it is not justified if not by a form of instrumentalism that surely is at odds with the very approach to metaphysics that underlies the entire discussion.

4 Universals

In the second part of his paper (Sects. 10, 11), Benovsky considers the opposition between bundles and substrata from the point of view of properties as universals. While the claim, in Sect. 10, that BTU_1 and STU are on a par with respect to the Identity of the Indiscernibles (both the unique compresence relation and the substratum can be said to be primitive carriers of numerical identity making it possible for numerical distinctness not to be accompanied by any qualitative difference) is correct, what Benovsky says about BTU_2 is not equally uncontroversial. Benovsky claims in Sect. 11 that

“what makes BTU_2 a different view from the others is also its main weakness” (2008; 186).

He offers three reasons in support of this statement:

- (i) BTU_2 entails that objects are collapsed onto universals and this is both undesirable and inconsistent;
- (ii) BTU_2 is incompatible with endurantist indexicalism;
- (iii) BTU_2 is incompatible with endurantist adverbialism.

It seems indeed the case that, were this correct, one would have difficulties in accepting BTU_2 , and Benovsky's conclusion (ii) (the bundle and the substratum theory are different only when the former is formulated in an unappealing version) would be warranted. In fact, the rejection of what one may call the 'canonical' bundle theory would be a more generally remarkable by-product of Benovsky's paper in itself.

However, i. is false. Benovsky starts off by endorsing the frequently made claim that BTU_2 is committed to the Identity of the Indiscernibles. In evaluating this commitment *vis-à-vis* alleged difficulties, he considers Hawthorne's claim (1995) that the bundle theorist can make sense of Black's (1952) well-known two-sphere world by saying that there one has a single sphere existing at two places.¹⁸ However, since this seems to mean that objects are multiply instantiable exactly in the same way as properties, Benovsky concludes that

“such a view really seems to collapse the distinction between objects and properties—indeed, it seems that objects are simply eliminated from ontology”. (2008; 186)

This, says Benovsky, would surely be an undesirable consequence.

In fact, he explains, something stronger can be said. For, it is *impossible* for objects to be multiply instantiated. Benovsky reports Vallicella's (1997) argument to this effect, which can be summarized as follows:

- (1) To be multiply located, a bundle would have to be instantiated;
- (2) Instantiation requires being bundled with universals;
- (3) A bundle is complete, and so cannot be bundled with universals;
- (4) Hence a bundle cannot be instantiated;
- (5) Hence a bundle cannot be multiply located.

BTU_2 would thus appear to be inconsistent.

However, first, Hawthorne's is neither the only reaction to alleged counterexamples to the Identity of the Indiscernibles available to the supporter of BTU_2 , nor the most popular—it is in fact a very peculiar take on the issue. Even assuming that the seeming thought-experimental violations of the Identity of the Indiscernibles must be accounted for directly, which is not obvious (sophisticated metaphysicians typically offer *a priori* reasons for believing in the Identity of the Indiscernibles, and so circumvent the threat represented by putative counterexamples),¹⁹ the bundle

¹⁸ Which of course means that location is excluded from the range of the universal quantifier over properties in the principle of the Identity of the Indiscernibles, which is not uncontroversial.

¹⁹ This is, of course, the case for Leibniz. For a contemporary example, see Della Rocca (2006) interesting reasoning based on the inconceivability of completely overlapping and materially coincident indiscernibles.

theorist can respond to Black's alleged counterexample and similar ones in at least two other ways. S/he can reject the possibility of indiscernibles in spite of Black's thought experiment, providing reasons to regard the latter as not compelling (see Odegard (1964); Hacking (1975); Casullo (1982)); or s/he can refine the notion of discernibility so that the alleged counterexamples are explained away and numerical distinctness given a qualitative basis (see Saunders (2003) and his use of Quine's (1976) notion of weak discriminability, allowing for individuation exclusively 'caused' by irreflexive relations).²⁰ It would seem that these alternatives preserve the difference between the bundle theory and the substratum theory with respect to the Identity of the Indiscernibles while avoiding the alleged unappealing consequence pointed at by Benovsky. (Another possibility is that suggested by Rodriguez-Pereyra (2004): according to him, it could be that universals exist *together with* unique property-instances, and so numerically distinct indiscernible bundles are possible even in the context of BTU₂. However, since it does not preserve a necessary commitment to the Identity of the Indiscernibles, this alternative appears to support Benovsky's equivalence claim. Also, the positing of unique instances over and above universals raises the question of whether one really has BTU₂.)

Even following Hawthorne's line of argument, in any event, it can be maintained that claim i. is avoidable, as that objects *behave* like properties and there can exist indiscernible objects at different places does *not* entail that *there is no ontological difference* between objects and properties.

Vallicella's argument, in particular, can be circumvented by denying (1). One can do so by regarding the two indiscernible objects (i.e., the multiply located bundle) not as two instantiations of the same complete entity, but as indiscernible by-products of what one may call two 'continuous processes of instantiation' only involving universals at each stage. That is, since it is possible for both universal A and universal B to be instantiated at multiple locations, one can have an instance of A at location x, y, z and one of B at x_I, y_I, z_I and vice-versa; and since both A and B can be bundled with other universals wherever instantiated, it is also possible to have both an instance of A and one of B at *both* location x, y, z and location x_I, y_I, z_I . But compresence is sufficient for object-hood, and so the possibility just described implies that one has two identical but not co-located AB objects. In this construction, at no point was an object instantiated as a whole, and yet one has two indiscernible objects constructed bundle-theoretically. Therefore, one can interpret Hawthorne's talk of multiply instantiated objects as a mere figure of speech, not to be taken literally, and the alleged difficulty is overcome.

As for ii. above, there too Benovsky seems to be mistaken. He considers the case of a hypothetical 'time-travelling Cyrano' who meets himself in the past at a time in which he has not yet undergone plastic surgery to reduce his nose. Benovsky argues that in the suggested scenario endurantist indexicalism²¹ requires properties to be

²⁰ In Black's case, this means that the two spheres are told apart as distinct purely qualitatively, by the '... is at a distance ... from...' symmetric but irreflexive relation (with the blank after the word 'distance' filled by anything defining it as a non-zero magnitude).

²¹ According to which properties are always relative to specific times.

- (a) Time-bound (this is required by endurantist indexicalism in general), and
- (b) Spatially-bound (because Cyrano-in-the-past has a property—‘having a big nose at t_1 ’—which is incompatible with a property of Cyrano-from-the-future—‘having a small nose at t_1 ’)

and that this reduces BTU_2 to BTT. But—even granting that the time travel example is not intrinsically contradiction-involving and can instead be taken to exemplify a general truth, which may be doubted—Benovsky does not prove here what he needs to.

First, not all properties need to be space-bound in the envisaged scenario but only those that would (allegedly) entail a contradiction if they were not (as with Cyrano’s nose). Thus, one does not have *exclusively* space-time bound properties, and the reduction of BTU_2 to BTT is at least incomplete.

Secondly, and more importantly, the difference between tropes and universals does not have to do with the property instances’ *actual* spatio-temporal location, but with their identity-conditions, which are entirely definable *a priori*, in terms of (*im*)-*possibility* of *multiple instantiation*.²² In particular, a universal is such even if uniquely instantiated. Benovsky could argue that the alleged metaphysical distinction invoked here is one without observable consequences, and so there is in fact no distinction at all between a trope and a uniquely located universal. However, against such a ‘verificationist methodology’, as before one could respond by asking what *empirical* difference could be expected to emerge from a comparison of two (supposedly) equally satisfactory ontological accounts of the same facts. Once again, it is *our ontological interpretation* of the empirical evidence—in the present case, of the nature of properties and of similarity facts—that is affected, and the basic *postulates* of one’s ontology that must be compared. If one cannot make sense of this type of difference, then one should do away with metaphysics altogether. But this is certainly not what Benovsky intends to do.

However, the key problem with the Cyrano example is another: What grounds the assumption that Cyrano-in-the-past and Cyrano-from-the-future are numerically identical? Surely not the Identity of the Indiscernibles, as the two Cyranos have different (not only spatio-temporal) properties. In fact, the numerical distinctness of the two Cyranos appears to be *demand*ed by Leibniz’s Law (identical entities necessarily have all the same properties). If it is replied that *we know* that Cyrano is the same person although he occupies two different locations, this is done on the basis of an intuition that can only be rooted in non-qualitatively-given identities, which the BTU_2 -theorist definitely does not share (and Benovsky too seems to doubt about, as shown by our earlier discussion).²³ But if it is not established that the two Cyranos are the same object, then the requirement of spatial boundedness ((b)

²² See Gracia (1988).

²³ In more detail, the two Cyranos could only be identified on the basis of either bare identities/haecceities, that are to be excluded in the context of the bundle theory; or of ‘impure’ essential properties circularly referring to them, such as ‘being Cyrano’, which would clearly fail to settle the issue regarding their identity/difference.

above) dissolves. Hence, Benovsky's second claim about BTU_2 is disarmed (and the suspect that the example is ill-chosen alimented).²⁴

Lastly, Benovsky's point (iii) is also contentious. While Benovsky claims that the supporter of BTU_2 cannot endorse endurantist adverbialism because s/he

“cannot (and does not want to) provide anything like [...] a substratum that needs to be related by a special relation to its properties” (2008; 189),

this is not so obvious. One may have reasons (see, for instance, Simons' 'kernel' theory (1994)) for postulating a 'core' of unchanging compresent properties that act as a substratum, and that become compresent with additional (in this case, adverbially-qualified) properties. And this is certainly metaphysically possible. Hence, Benovsky's claim is incorrect.

Independently of this, and more generally, one may also wonder why one's ontological account should be discarded because it is at variance with one (specific version of one) of the many possible accounts of persistence in time (which is what is suggested by Benovsky's points ii. and iii.). If there is no real reason for doing so, then, even conceding that Benovsky is right, we would have here a difference between the bundle theory and the substratum theory (this time explicitly acknowledged by Benovsky), without one of them becoming unappealing because of it, and Benovsky's claims would be undermined once again.

Summarising this second part of my argument, Benovsky's conclusion (ii) does not hold, because claim i. can be rejected as false, claim ii. follows from a contentious thought-experiment only under equally contentious interpretative assumptions, and claim iii. is also wrong at least according to one particular understanding of the theory; and at the same time, at least if one insists that BTU_2 does require a commitment to the Identity of the Indiscernibles (say, along the lines of one among the alternatives to Hawthorne's understanding of Black's thought-experimental universe mentioned above), the difference between the bundle theory and the substratum theory appears quite clear.

5 Conclusions

In his paper, Benovsky successfully points out some commonalities between the bundle theory and the substratum theory. However, these similarities and a general explanatory similitude are insufficient for establishing the equivalence—suggested by Benovsky—between these two views on the ontological constitution of material objects. Different consequences of the bundle and substratum theory, arguably not eliminable but intrinsic to the relevant ontological categories themselves, can be identified. Empirical underdetermination is, in addition, a normal thing to expect if intended in the sense that evidence does not determine *the* correct ontology; and it does not occur at all if intended in the sense that our interpretation of reality is

²⁴ Also note that Benovsky's passing claim that this version of the bundle theory is incompatible with perdurantism (2008; 188) is unwarranted as well. For, the basic perdurantist idea is that all objects are space-time bound is not contradicted by the claim that qualitatively identical but not co-located bundles (can) exist—which, I argued, is all a bundle theorist has to say to parry Vallicella-type objections.

absolutely the same whatever choice we make regarding ontology. Also, the version of the bundle theory that Benovsky himself admits to be peculiar is not, contrary to what he claims, also unappealing. Benovsky's assertions to the contrary are based on unwarranted assumptions and/or a consideration of the available conceptual tools that is only partial. In the light of all this, it seems that both of Benovsky's claims can be resisted as they stand. The complexity of the discussion, and the conclusions reached, indicate that there may be otiose differentiations and useless quarrels within ontology, but there surely is a reason why metaphysicians regard the bundle theory and the substratum theory as deadly enemies.

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