

## REALIST BUNDLE THEORY

Philosophical theories of the nature of concrete particulars come in two basic kinds, those according to which a concrete particular consists of properties and a bearer of those properties (a *substratum*), and those according to which a concrete particular consists only of its properties, in a relation of *compresence* or *concurrence*. Substrata are theoretical entities defined by their explanatory functions. As such, there is not much disagreement about their nature: they are propertyless, unobservable constituents of concrete particulars that are the bearers of properties and the individuators of distinct particulars.<sup>1</sup>

The situation is different with respect to properties. Among realists, some think properties are universals, either transcendent (Platonists) or immanent (Aristotelians), and some think they are particulars (“tropes”<sup>2</sup>). Of the resultant possible positions on the nature of concrete particulars, six have been the focus of recent philosophical attention. These theories variously identify concrete particulars with (i) material substrata bearing transcendent universals, (ii) material substrata bearing immanent universals, (iii) material substrata bearing abstract particulars, (iv) bundles of transcendent universals, (v) bundles of immanent universals, and (vi) bundles of abstract particulars.

The bizarreness (some would argue *impossibility*) of substrata (how could something exist with *no* intrinsic properties?) has led some philosophers to favor bundle theory as the more

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<sup>1</sup> One possible disagreement over substrata concerns whether or not it is the *same* entity that bears properties and individuates distinct particulars. However, most theorists agree that though it is possible that bearers are not individuators, considerations of simplicity favor identifying them.

<sup>2</sup> Tropes are often characterized as *abstract* particulars. This does not mean that tropes are non-spatiotemporal, but, rather, that they cannot exist independently of the concrete particulars they are properties of.

reasonable of the two basic options.<sup>3</sup> But not all versions of the bundle theory have seemed equally plausible. It is clear, for example, that concrete objects cannot be bundles of *transcendent* universals, given that the latter are abstract objects: any bundle of universals<sup>4</sup> so conceived would have to be an *abstract* object. Moreover, since the identity condition for bundles is sameness of things bundled, there could be no qualitatively identical but numerically distinct objects on this view. There is only *one* bundle of any set of transcendent, maximally determinate universals, and, hence, only one object that could have those universals. This is seen as implausible since, intuitively, it seems possible for distinct particulars to be qualitatively identical (consider two electrons in exactly the same internal state).

The immanent bundle theory does not have the transcendent theory's first problem, since immanent universals have spatiotemporal locations. It might seem, however, that it cannot escape the second problem. If  $b$  and  $b^*$  are bundles of immanent universals, and every universal bundled in  $b$  is bundled in  $b^*$ , and vice versa, then  $b$  and  $b^*$  are the same bundle – the same object: immanent bundle theory entails the principle of the identity of indiscernibles; but this principle is false. In response, the immanent theorist can maintain that the sort of intuition on

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<sup>3</sup> In fact, I think the weirdness of substrata should in itself be no more reason to reject them than the weirdness of subatomic particles, superstrings, quantum foam, parallel universes, extra dimensions “curled up inside” points of our three-dimensional space – or any of the other exotica physicists and cosmologists are advertising these days – is good reason for rejecting them. We should follow theory, whether scientific or philosophical, where it leads, and (at least provisionally) accept the existence of the entities postulated by the best of them, however strange they may seem.

<sup>4</sup> If such there could be: bundle theorists generally understand bundling in terms of *spatiotemporal* compresence or co-occurrence of universals. There might be a role for something *like* bundles of transcendent universals (unified by something analogous to compresence) – viz., as *types*. (I develop this idea elsewhere.)

which the denial of the identity of indiscernibles is based (e.g., that there could be a universe containing nothing by two qualitatively identical spheres) is in fact consistent with its being true. Since immanent universals can be multiply located, bundles of them can be multiply located as well.<sup>5</sup> Just as (a maximal determinate of) the universal *red* can be wholly present in that house and that rose and that sunset, the universals *red, round, smooth, juicy, etc.* can be compresent as this cherry, that cherry, and some other cherry as well. Apparently qualitatively identical but numerically distinct particulars are in fact the *same* bundle of immanent universals – the same *object* – in different places. Hence: possibly, a thing *x* at one location is qualitatively identical to a thing *y* at another location and *x* is numerically identical to *y*.

This has its own counterintuitive consequences. For example, what *appears to be* a bowl of *n* qualitatively identical, numerically distinct cherries is really a bowl of one cherry, *n* times. And no matter how many of them you eat, provided you do not eat them all, you do not reduce the number of cherries in the bowl. But the immanent bundle theorist can reply that the *core* of our ordinary intuition – that the number of things in the bowl has been reduced – is preserved (the number of locations of the cherry has been reduced); and, further, that one ought to expect some of our ordinary beliefs to get overthrown as knowledge advances. (Indeed, some physicists have entertained the idea that there is only *one*, multiply-located electron.) This is not the end of the immanent bundle theorist's troubles, however.

The apparent existence of qualitatively identical, numerically distinct objects with different spatial locations is consistent with the theory, as is the appearance of reduction in the

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<sup>5</sup> Cf. O'Leary-Hawthorne 1995 and O'Leary-Hawthorne and Cover 1998. (It seems to me that the objection to O'Leary-Hawthorne in Vallicella 1997 that since particulars cannot be multiply located they cannot be bundles of immanent universals simply begs the question.)

number of such objects. One may also explain the appearance of independent change in spatial location.<sup>6</sup> However, since according to the theory there is only *one* bundle of universals that is identified with a given concrete particular, and no individual bundle can change without changing, it follows that *none* of a group of qualitatively identical objects could change any of its properties without *all* of them changing exactly the same properties in exactly the same way. However many locations an object might be in, it cannot change its properties at one of them without changing its properties at all of them. But this seems wrong. Couldn't we put one of the qualitatively identical cherries in the refrigerator and leave another on the windowsill to rot?<sup>7</sup>

One way around this is to claim that what appear to be independent changes among qualitatively identical objects is really their replacement by distinct bundles of immanent universals. If it appears that one of the cherries has begun to rot, what has actually happened is that a different bundle of universals – a different cherry – has manifested itself in the precise location of the original.<sup>8</sup> This may seem to make persistence through change impossible: if an object *is* some particular bundle of universals, then it can be no *other* bundle of universals. But this can be avoided by adopting a four-dimensional ontology and construing the temporal parts of

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<sup>6</sup> If a bundle can be in one or more places at once, then its being at one location at a time is independent of its being at any other location at that time. Hence, if it is possible for a bundle *b* at location  $l_1$  at time  $t$  to move to location  $l_2$ , then it is possible for bundle *b* at location  $l_3$  at time  $t$  to move to location  $l_4$  ( $l_1 \neq l_2 \neq l_3 \neq l_4$ ).

<sup>7</sup> Cf. Zimmerman 1997.

<sup>8</sup> I use the term 'manifestation' for the relation between an immanent universal (or a bundle of such) and its various locations, and contrast it with 'instantiation', which I use for the relation between a transcendent universal and its particular exemplifications.

a changing object as distinct bundles of universals.<sup>9</sup> What appear to be qualitatively identical objects that can change in different ways over time is really a single but multiply-located temporal part of distinct but overlapping four-dimensional objects. What we have in the bowl now is a multiply-located common part of a number of distinct four-dimensional cherries, each with its own distinct future.

Overlap of temporal parts is a familiar feature of four-dimensional accounts of concrete objects, and, though such accounts have their costs,<sup>10</sup> perhaps its usefulness makes it worth the price. But immanent bundle theory also entails that no two objects that are in any way similar – that have *any* property in common – are entirely distinct. Overlap of spatial parts is familiar from some sorts of cases (bodies with shared limbs, rooms with shared walls, etc.), but immanent bundle theory seems to entail that it is ubiquitous. On immanent bundle theory, we must accept not only that what appear to be distinct qualitatively *identical* objects are (is?) really one object multiply located, but also that what appear to be distinct qualitatively *similar* objects are not entirely distinct. If *b* and *b\** are bundles of immanent universals, and at least one universal (but not all) bundled in *b* is bundled in *b\**, then *b* and *b\** have a common part, and are not distinct particulars – they overlap. That is, no *distinct* concrete particulars could share *any* of their properties – clearly a much worse consequence than that no distinct concrete particulars could share *all* of their properties.

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<sup>9</sup> In any case, persistence through change is equally a problem for *all* versions of the bundle theory (and perhaps for substratum theories, as well).

<sup>10</sup> For example, four dimensionalism seems to force adoption of a counterpart-theoretical view of modality *de re* (an unacceptable consequence for some).

Accommodations analogous to those above might be introduced to deal with these results; but the mounting complexity of the theory and its increasing distance from our commonsense notion of a concrete particular may be seen as motivating a different approach.<sup>11</sup> Thus, some philosophers defend the *trope* version of the bundle theory: concrete objects are bundles of compresent tropes, none of which is literally shared by any other particular. The (maximally determinate) reds of the house, the rose, the sunset and the cherries are *different*, but exactly resembling, properties. Qualitatively identical, numerically distinct objects are distinct bundles of exactly resembling tropes. The trope bundle theorist also accepts the principle of the identity of indiscernibles, but explains away its apparent falsehood in a way different from the immanent bundle theorist. Qualitatively indistinguishable objects are not multiple manifestations of a single bundle, but distinct bundles of indistinguishable properties. Objects partially resemble each other not by sharing properties, but by having unique properties that resemble each other. (Resemblance of properties is itself most commonly taken to be a primitive, unanalyzable fact.)

The most important cost of trope bundle theory is its denial of the commonsense notion that particulars resemble each other by sharing properties. The pretheoretical judgment that the cherries all *have the very same color* – that there is *one* color that they all share – is an intuitively powerful one. But this is seen as a price worth paying, since no other version of the bundle theory has a lower cost. Something has got to give; and it has seemed to some that in adopting

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<sup>11</sup> Hughes 1999 raises further, more sophisticated problems for immanent bundle theory. (I think Hughes is mistaken in thinking that a four-dimensionalist immanent bundle theorist must accept that universals have temporal parts. If an immanent universal can be wholly present at different places, why can't it be wholly present at different times?)

trope bundle theory one gives the least.

There is however another, overlooked version of the bundle theory that has none of the costs peculiar to any of the other six versions.<sup>12</sup> It is overlooked because it is routinely conflated with trope bundle theory, from which it is nonetheless importantly different. The view I have in mind holds that a concrete object is a bundle of *instances* of *transcendent* universals.<sup>13</sup> Instances are spatiotemporally located particulars, as are bundles of such instances. Since no two instances are numerically identical, no two bundles of instances are numerically identical, yet they may be qualitatively identical, in being instances of exactly the *same* transcendent universals. Tropes are like instances of transcendent universals in being spatiotemporally located particulars. But they are unlike instances of universals in *not being instances of universals*. One consequence of this is that the resemblance of trope-bundles cannot be explained.<sup>14</sup> In contrast, the resemblance of instance-bundles can: two instances are qualitatively identical iff they are instances of the *same* universal; and two bundles of instances are qualitatively identical if they are bundles of instances of the same universals. Furthermore, since, though instances are directly connected to their universals, they are not directly connected to each other, one bundle of them can change

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<sup>12</sup> Casullo 1988 offers a version of the bundle theory that avoids commitment to the identity of indiscernibles for almost all objects. But his theory postulates so-called “landmark” objects on the basis of which all others are constructed. The physical universe is founded upon some relatively small number of qualitatively distinct objects (most plausibly, elementary particles). But this seems implausible empirically; and it does not evade the other problems for bundle theory discussed above.

<sup>13</sup> Apparently Meinong held a position like this (cf. Oliver 1999).

<sup>14</sup> Some have proposed an infinite hierarchy of higher-order resemblance tropes, each accounting for the resemblance of *n*-tuples at the level below it. But it is not clear that resemblance in general is explained on such an account.

independently of any other bundle of them. Finally, no two instance-bundles will literally share any of their constituents; so the overlap problem is avoided as well.

This account is also to be distinguished from that presented in Rodriguez-Pereyra 2004, on which a concrete particular is an instance of a bundle of universals. As noted above, the relation in which the constituents of a concrete particular stand to each other is *spatiotemporal compresence*. Since transcendent universals are themselves not spatiotemporally located, they cannot be compresent in the way bundle theory requires. This is a relatively subtle point; but I think it is an important one. The version of the theory presented here does not require any modification of the basic tenets of bundle theory as it is commonly understood.

Furthermore, on Rodriguez-Pereyra's recommended theory, (a) an instance of a bundle of universals is entirely constituted by the universals in the bundle, (b) a bundle is wholly located where its instances are, and (c) an instance and its bundle are two distinct things (op. cit.: 78). I think the coherence of this position is questionable. *Instantiation*, the relation holding between universals and their particular exemplifications, is most naturally (and historically) associated with *platonism* – the view that universals are transcendent, non-spatiotemporal entities. But, given that constitution is understood by the bundle theorist as *parthood*, a concrete object cannot be constituted by transcendent universals. Moreover, it is hard to see what the difference could be between a bundle of universals and its instances if the universals are not transcendent: it would not be consistent to construe universals as *immanent* and their occurrences as *manifestations* while holding that bundles and their instances are distinct things. Finally, to hold that a bundle and its instances are *colocated* is to identify every concrete object with a pair of coincident entities.

I suspect that the root of these problems is a conflation of whole and complete *presence* (manifestation) of a universal in a thing (possible only on an Aristotelian conception) with whole and complete *exemplification* (instantiation) of a universal in a thing (possible only on a Platonic conception). The version of the bundle theory I am touting does not have these shortcomings. Concrete objects are not constituted by transcendent universals; they are constituted by (bundled) spatiotemporal instances of transcendent universals; and they are not identified with coincident pairs of instances and bundles.

To be sure, instance bundle theory is not a version of *universal* bundle theory, insofar as it does not claim that concrete objects are bundles of universals. But in the general context of bundle versus substratum theory, this is not relevant. It is a *realist* theory since it recognizes the existence of (transcendent) universals, and it claims that their existence is ontologically prior to the existence of concrete objects. It has the advantages of universal bundle theory and trope bundle theory, but none of their proprietary problems. I hereby recommend it to bundle theorists everywhere.

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