Bundle theorists agree with substratum theorists in denying that the concrete objects of everyday experience are ontologically basic or fundamental.

According to Bundle Theory, a concrete particular is just a “bundle,” a “cluster,” a “collection,” or a “congeries” of the empirically manifest attributes that common sense associates with it. No mysterious bare substrata.

The “glue” that binds bundles is a primitive relation called “compresence,” “collocation,” “combination,” “consubstantiation,” or “coactuality”. This primitive relation is explained informally as the relation of occurring together.

According to bundle theorists, there are really only attributes, properties, or tropes. What we call “particulars” are mere constructions out of these.

Different attributes entail different bundles, so where we have change we have numerically different bundles and, hence, numerically different objects.

As Loux points out, this is also a problem for substratum theory — general problem: changes in constituents lead to changes in wholes. Study Question.

Why does Loux (Van Cleve) say that bundle theory implies particulars have their attributes necessarily? Parallels the claim that trope theory implies there could not have been more or fewer courageous people than there in fact are.

This also seems like an undesirable consequence, since it seems that (for instance) I could have been taller than I in fact am. But, on this reading of bundle theory, no particular could have had any attributes other than those it in fact has. Is there a way for the bundle theorist to avoid this consequence?

In the case of trope theory, I suggested that the definite description “the set of courageous tropes” is like “the number of planets” or “the set of courageous people”, which may refer to different sets in different worlds or situations. This seemed plausible for trope theory’s account of abstract singular terms.

Will a parallel move work for bundle theory’s account of proper names? It’s not so clear. Bundle theory says that “Branden” denotes a set of compresent attributes. We could try to Quine/Russellize here: “the set of compresent attributes that is-Branden”. Is this description like “the number of planets”?

Maybe. But, this time the question is trickier, owing to thorny questions about personal identity, and identity conditions for particulars, generally. To wit...

We make all kinds of nonequivalent claims about concrete particulars. For instance, “Sam is red,” “Sam is spherical,” “Sam is 2 inches in diameter”, etc.

Challenge from substratum theorist: Answer the following 2 questions:
- What is the thing “Sam” to which an attribute is being said to be related?
  - A1: Just the bundle of attributes that is the thing we’ve dubbed “Sam”.
    - But, then don’t these claims come out tautologous (true by logic)?
    - However, we can use the name “Sam” to denote a bundle without knowing all of its constituents. So, claims can still be informative.
  - A2: The bundle of attributes “Sam” sans the attribute in question.
    - Now, no two nonequivalent statements are about the same thing.
- What relationship is being said to obtain between the two?
  - The relation of constituent to whole. This is just like set membership.
- But, like sets, bundles cannot change their membership, so they have their attributes necessarily. Key difference between substratum & bundle theories.
Concrete Particulars VIII: Objection #2 to Bundle Theory 1

- The 2nd objection is an argument involving the following three principles:
  - (II) Necessarily, for any concrete objects, \(a\) and \(b\), if for any attribute, \(\phi\), \(\phi\) is an attribute of \(a\) iff \(\phi\) is an attribute of \(b\), then \(a\) is numerically identical with \(b\).
  - (II) says that complete qualitative indiscernibility (agreement with respect to all attributes) entails numerical identity. Its converse seems trivial. Why?
  - (PCI) Necessarily, for any complex objects, \(a\) and \(b\), if for any entity, \(c\), \(c\) is a constituent of \(a\) iff \(c\) is a constituent of \(b\), then \(a\) is numerically identical w/ \(b\).
  - (PCI) is accepted both by substratum theorists and by bundle theorists. It says agreement with respect to all constituents entails identity. As was the case with (II), the converse of this claim (which is a distinct claim) seems trivial.
  - (BT) Necessarily, for any concrete entity, \(a\), if for any entity, \(b\), \(b\) is a constituent of \(a\), then \(b\) is an attribute. [this should be an iff, I think, see below]
  - (BT) is basic for bundle theory: only attributes are constituents of particulars.

Concrete Particulars IX: Objection #2 to Bundle Theory 2

- Loux (Black) considers a pair of spheres \((a\) and \(b)\) with the same shape, color, mass, texture, size, etc. As he puts it “they are so similar that no one can tell the difference between them.” Could this be a counterexample to (II)?
- What about the properties \(A\) = being identical with \(a\), and \(B\) = being identical with \(b\). Don’t \(a\) and \(b\) fail to share these properties? (\(Aa\), not \(Aa\), not \(Ba\), \(Bb\))
  - Loux argues that the bundle theorist is not allowed to appeal to such properties, since they are reductionists about particulars, and such properties presuppose an “irreducible” notion of a particular: one that cannot be be understood as a mere bundle of attributes. Such properties are impure.
  - This leads Loux to formulate a revised version of (BT).
  - (BT*) Necessarily, for any concrete entity, \(a\), if for any entity, \(b\), \(b\) is a constituent of \(a\), then \(b\) is a pure property/attribute.
  - (BT*) and (PCI) entail something stronger than (II) (w/only pure properties).
- The argument of objection #2 (from simplified versions of the 3 principles):
  - (II) Agreement on all attributes entails identity.
  - (PCI) Agreement on all constituents entails identity.
  - (BT) The attributes a thing has are all and only (!) the constituents it has.
    - Step 1: (PCI) + (BT) entails (II). [Easy.]
    - Step 2: (II) is false. [Not so easy. This is where the real controversy is.]
    - Step 3: Since (PCI) is uncontroversial, (BT) is false. [Easy.]
    - Step 4: Since bundle theory entails (BT), bundle theory is false. [Easy.]
  - NOTE: This argument only applies to the realist’s (BT). A trope theorist will either accept (PCI) and (II) in vacuous forms (with no consequences for their theory), or they will deny them. No two objects can share any tropes (viz., constituents). “Agreement” is merely similarity between tropes. But that’s not “agreement” in a sense strong enough to imply a non-vacuous (II). So, (II) may follow from (BT) and (PCI), but only vacuously for a trope theorist. There are no compelling trope counterexamples to (II)!
  - The difficult step here is step 2. What are the counterexamples to (II)?
Many people view the above argument [from not (II*) and (PCI) to not (BT*)] as a refutation of the metaphysical realist version of bundle theory [(BT*)].

Thinking more deeply about these conditions leads, according to Loux, to a persuasive positive argument in favor of substratum theory.

If (II*) is false, then there will be distinct particulars which (nonetheless) share all pure properties. For instance, think about our spheres  \( a \) and \( b \).

\( a \) and \( b \) will share all pure properties. And, their impure properties are not useful for determining their constituents. As Loux says:

\[ \ldots \text{since our aim is to identify the constituents out of which concrete particulars are composed, the items we appeal to \ldots cannot already presuppose the complex entities that are concrete particulars, and impure properties all do.} \]

\[ \text{No \ldots impure \ldots properties can explain the [nonidentity] of \([a \; b] \).} \]

But, since (PCI) is true, and \( a \neq b \), there must be some constituent they do not share, which is not determined by any attributes \( a \) or \( b \) has — bare substrata!

We are told, for example, that bare substrata have no attributes essentially; but what of this feature of bare substrata? Is it one that is merely contingently true of bare substrata? Likewise, bare substrata are said to be the literal bearers of attributes. Is this a merely contingent feature of bare substrata? Is it possible that things could be otherwise, so that not they, but some other entities played this role? Again, bare substrata are said to be the principles of numerical diversity. Might they have failed to diversify objects? 

Is the substratum theory even coherent? It seems to be saying: things that possess attributes are bare. But to be bare is to possess no attribute. So, are we to infer that things which possess attributes possess no attributes?

There is an ambiguity in “possess”. To be fair, what the substratum theory is saying is that bare substrata (hence, particulars) do not possess any of their attributes necessarily — All particulars have all their attributes contingently.

In other words, the view is that none of the attributes of a substratum are essential to the substratum. None are constitutive of it (or of its identity).

Note: This makes it clear that bundle theory (on Loux’s reconstruction) and substratum theory are diametrically opposed on the question “Which attributes do particulars have necessarily?” BT: all; ST: none.

We have already seen that it’s pretty crazy to claim that particulars have all their attributes necessarily. It’s also pretty weird (naively) to say they have none of their attributes necessarily. At this point, Loux rightly speculates:

We already hinted at one objection to substratum theory: the epistemology of bare substrata. How can we be acquainted with or know about bare substrata?

Interestingly, many bare substratum theorists (\( e.g. \), Locke, Bergmann) have been self-identifying empiricists! They have various replies to this worry:

- To be acquainted with numerically diverse, yet qualitatively indiscernible objects is eo ipso to be acquainted with bare substrata.
- Being confronted with a pair of objects related as Black’s two red balls, \( a \) and \( b \), are, we are in a perceptual context where the principles of numerical diversity in them make themselves apparent to us.
- Since the attribute and subject are correlative concepts, it is impossible to be acquainted with an attribute without being acquainted with its subject.
- If attributes can be the objects of empirical awareness, so can the substrata that literally possess them.

This sounds question-begging and disingenuous. The bare substratum was not motivated on epistemically, but conceptual grounds. That should be their reply.

We are told, for example, that bare substrata have no attributes essentially; but what of this feature of bare substrata? Is it one that is merely contingently true of bare substrata? Likewise, bare substrata are said to be the literal bearers of attributes. Is this a merely contingent feature of bare substrata? Is it possible that things could be otherwise, so that not they, but some other entities played this role? Again, bare substrata are said to be the principles of numerical diversity. Might they have failed to diversify objects? 

There seem to be properties that are essential to everything. \( e.g. \), the property of being self-identical, the property of being red or not red, or colored if red.

There also seem to be properties that are essential to some things but not others. \( e.g. \), the property of not being identical to the number 7, the property of being red or non-red, or (perhaps) the property of being a human being.

So, it seems, if there are substrata, they will have some attributes necessarily. But, if that is so, then we seem to be off on a regress. The substratum theorist now needs a new (finer-grained) substratum to serve as the literal bearer of these (essential) attributes. But, they will have some essential features . . .
Concrete Particulars XIII: Aristotelian Substance 1

- It seems we’re faced with a choice between extremes. We can choose a theory which says that all attributes of all particulars are contingent (substratum), or we can choose a theory which says that all attributes of all particulars are necessary (bundle). This seems to leave us with only two options:
  - Go for Austere Nominalism, and deny that particulars are complexes.
  - Or, go for a trope-theoretic bundle theory (at least avoids (II)-argument).

- But, of course, this is a false dichotomy, since “All X’s are Y’s” and “No X’s are Y’s” do not exhaust the logically possible cases. A common-sensical view might be that some attributes of particulars are necessary and some are not.

- Or, as Loux puts it, one make take “concrete particulars themselves, or at least some among them, to be basic or irreducibly fundamental entities.” This is an Aristotelian (“mean”) view about substance, and our last theory of particulars.

*Loux’s second horn: a theory accepting (II), rather than a theory making all attributes necessary. Puzzle: why doesn’t Loux state the dilemma in the obvious way here? Why retreat to (II)? Study Q.*