

Structure in Ontology – 15/11/2007

The Structure of Material Objects

1. The theory of *substrata* and properties and its problems
 2. The bundle theory and its problems
 3. The theory of tropes and its problems
 4. The theory of substance and its problems
 5. The stuff theory and its problems
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- **The structure of the lecture on structure** – This lecture on structure has a structure, and its structure completely piggy-backs (with minor modifications) on Varzi [2007], which is the best introductory exposition of the subject I know of.
- As van Inwagen has pointed out, “the metaphysics of material objects has come to be recognized as one of the most difficult parts of philosophy” (Van Inwagen [2001]: 6). Whereas the very existence of *anything but* material objects is controversial in ontology (are there sets? Propositions? Properties? *Possibilia*? Etc. etc.), few philosophers would question the existence of what Austin called “moderate-sized specimens of dry goods”: houses, cars, trees, tables, flowers, bridges. However, the issue of the *nature* and the *metaphysical structure* of material objects is the subject of lots of controversies (which would be *metaphysical*, more than ontological controversies, given the terminology of our last lecture – but we know that the terminology itself is not well-defined).
- Because of this, I’ll follow Varzi in presenting **five competing** (but also variously related) **theories of material objects**, and highlighting, for each one, some of the standard objections against them raised in the literature by supporters of the rival positions; the theory of *substrata* (and properties), the *bundle* theory, the theory of *tropes*, the theory of *substance*, the *stuff* theory.
- What is a material object, to begin with? We may stick to a general three-folded characterization:
 - (1) Material objects are, well, **material**: they are physical, concrete objects, accessible to sensory experience. We can in principle see them, touch them, stumble upon them, and interact causally with them.
 - (2) They have **properties**, that is, they are variously **qualified**: this chair is red, that tree is brown and green; this table is rectangular and heavy, this window is clean, that one is dirty, etc. etc.
 - (3) They are **particulars**, that is, unlike universals, which can recur in different places, they have a unique and unrepeatable location in space and time: the universal *chair* (be it a concept, or property, or whatever) cannot sensibly be said to be just here and nowhere else, but *this* chair can.
- Philosophers of a strongly nominalistic attitude can claim that the intuition that material objects have various properties needs no further analysis: Out There, there are just objects, they are variously qualified, full stop (this was Quine’s [1948] position: this is a “fundamental and irreducible fact”, not requiring any further explanation). Metaphysically speaking, material objects are like “blogs” (Armstrong [1989], who does not subscribe to this view). Their various properties should be accounted for just in terms of the linguistic conventions governing the words we use to talk of them, such as the predicates “rectangular”, “red”, “dirty”, and son on – *ex placito instituentium*, as the austere nominalist Ockham used to say: we explain the fact that this chair is

red by simply saying that this chair is one of the things we call “red”, because of its similarity with other things, full stop.

- This does not sound as an explanation! Other philosophers believe, on the contrary, that material objects are complex unities, provided with a **structure**. The *metaphysical* disagreement begins when one has to explain what this structure consists in.

1. The theory of *substrata* and properties

- This has its roots in Aristotle’s *Metaphysics* (1029a 20-6), but Aristotle seems to have had “second thoughts” on it, for he also presents a different account of the metaphysics of material objects elsewhere in the *Metaphysics*, in the *Physics*, and in the *Categories* (the theory of *substance*. We’ll talk about this later). A complete formulation of the theory of *substrata* can be found in John Locke’s *Essay* (II, xxiii), who also criticizes it, as we shall see.
- According to this theory, material objects are made of:
 - (a) The **attributes** or **properties** that characterize them (the terminology, again, is not uniform; we may suppose we have some characterization or other of the notion of property get along with it). This chair is constituted, among other things, by a shape (it has the property of *being shaped so-and-so*), a colour (it is *red*), a certain *weight*, it is *made of steel*, etc. etc.
 - (b) The **substratum**, this is supposed to be the entity that, so to speak, *sustains* the various properties, underlies them and gives them unity. In medieval Latin philosophy, this was also called the *substantia* (= that which lies under), and also the *subjectum* (same meaning, more or less). But since the term “substance” is used with a different meaning in current analytic ontology, I’ll talk just of *substrata*. Russell [1911] and Bergmann [1967] talked of a **bare particular**: something which is a particular (i.e., spatiotemporally located) but, in itself, is bare, *naked*. It gets “dressed by” the various properties.
- Two notable features of the theory of *substrata*:
 - (1) The object is not the *substratum* itself: according to the theory, particulars are not found as “bare” in nature: they always come around dressed in some set of properties. The full-fledged material object is the *chair*, not its *substratum*, which is its constituent.
 - (2) The theory apparently accounts for the processes of **change** and **becoming**: it explains our natural intuition that material beings can change their properties while persisting in existence (the chair is red but can be painted in blue, Socrates is sitting, then he stands up, men grow old, trees lose their leaves, and so on). This can be explained by claiming, e.g.: the substratum of the chair is that which persist, while the chair loses the property of being red and obtains that of being blue, etc.

1.1 ... And its problems

- **Trouble no. 1 (the epistemic objection): substrata are mysterious!** (Berkeley, Hume) In order for a *substratum* to play its role, it has to be *bare*, devoid of properties. Then how can we *know* it? After all, what we experience are *properties*: we look at the chair, touch it, and experience its redness, its weight, its being warm, or cold, etc. (actually, even *that* we experience here are *properties* is controversial, as we shall see, but let us pretend this is the case, for the time being). But none of these experiences can testify a *substratum* which, by definition, is devoid of properties, thus empirically inaccessible.
- This criticism can be found in Locke’s *Essay*:

We have no [...] clear Idea [of substance, in the sense of the *substratum*] at all, and therefore signify nothing by the word, but only an uncertain supposition of we know not what, i.e., of something whereof we have no particular distinct positive idea, which we take to be the substratum, or support of those ideas we do know (Essay, I, 4, 18).

- A possible reply: it is not true that *substrata* are unknowable (Allaire [1963]). Make the following mental experiment (this can be found in Kant's *Critique of Pure Reason*, as an anti-Leibnizian argument): pick two qualitatively indistinguishable spheres. Same colour, same shape, same weight, etc. We can easily imagine the two spheres in front of us. Now they are *two*, even though every property of the one on the left, say, is also a property of the one on the right, and *vice versa*. The fact can be explained by claiming that the difference is based upon the fact that we have two different *substrata*, and this is sufficient to account for the duplication of material objects: the properties are the same, but the *substrata* are different. So *substrata* are not so unknowable, after all.
- Now one may claim that the two spheres do differ on at least one property: after all, one is the sphere on the left (say), the other is a sphere on the right. They have different spatial locations. But this will not do, insofar as (as most philosophers are willing to claim: see e.g. Lewis [1986], Varzi [2001], but Leibniz himself held this view) that spatiotemporal relations (like *before*, *below*, *in front of*) are merely *relational* features of beings, not intrinsic properties.
- **Trouble no. 2: substrata are inconsistent!** (Sellars [1952]). The notion of a bare particular does not make sense. We are told that a *substratum* is devoid of any property, but how can this be? After all, it should have at the very least the property of *being a substratum*, or *being bare* – not to speak about such trivial properties as *being self-identical* (a logical property), *coloured-if-blue* (a trivial conditional property), *either-circular-or-not-circular*, etc.
- Possible reply (Moreland [1998]): granted! A *substratum* can be devoid of *natural* properties, or *empirical* properties (such as the property of being red, or heavy, or dirty, or round, etc.), but it does not need to be devoid of *transcendental* and *logical* properties: we can agree that *substrata* are *self-identical*, etc. So we only have to suitably restrict the relevant set of properties we are talking about.
- Furthermore, it may be a mistake to claim that the fact that a substratum is naked, bare, i.e., deprived of the (suitably restricted) properties entails that it does have the property of *being naked*, or *bare*. That x is a bare particular means: for any property P (in the suitably restricted set of properties), x lacks P . This does not entail that he has the property of *not having* P . This is a merely negative characterization, and most philosophers doubt that such predicates as “not green” or “not heavy” succeed in picking out “negative properties” which would be constituents of “negative facts (see the famous debate between Russell and Demos [1917]).

2. The bundle theory

- This comes around in a variety of shapes, but we can stick to a minimal common core of ideas. These are due to the same British empiricists who criticized the notion of *substratum*, such as Berkeley and Hume. Among the subscribers of (some version or other of) the bundle theory are Russell [1940] (Russell used to change his mind on various subjects), Hochberg [1964], Castaneda [1974], O'leary-Hawthorne and Cover [1998].
- In a nutshell, obtaining the bundle view of material objects is easy: just pick the theory of *substrata*, and remove the *substratum*! What you are left with are properties. The bundle theory claims that **material objects are bundles of properties**, kept together by their simultaneous presence in a spatiotemporal region (in some versions: by some kind of relation which operates on a different level from “standard” properties and relations). So this chair is nothing but a gathering of properties, such as *being red*, *having such-and-such a shape*, *such-and-such weight*, and so on.

- Michael Loux [1998] has claimed that the bundle theory entails a strong revisionism with respect to ordinary language (it is, to some extent, a form of prescriptive metaphysics). When one claims:

This chair is red,

One *seems* to make a statement about a certain object exemplifying a property, but actually, one may be saying something like this:

The property of redness is *present* (as one of the properties that constitute this thing, the chair).

And Loux has claimed that talking of properties that are here now is a bit like talking of the weather: we say “It’s raining”, meaning something like: “Rain is present here and now”, and likewise we say “There’s some redness here”, or “Redness is present here”.

2.1... And its problems

- **Trouble no. 1: things don’t change!** The theory of *substrata* explained change and variation in an intuitive way: the same *substratum* sustains different properties at different times. But if this chair *is* the package of its properties, then how can you explain the intuitive fact that you can paint the *same* chair in blue? *Being uniformly red* and *being uniformly blue* are incompatible properties; so a bundle with the first property simply is a different bundle from one with the second.
- The problem of temporal change may be solved by indexing properties with respect to times. This chair does not have the property of being red *simpliciter*, but the property of being red-*at-t*; so it can have the property of being blue-*at-t*₁. However (Lewis [1986]), this has to be done with all properties, so all properties become relations to times, and this sounds quite odd: *being red* seems to be an intrinsic property of this chair, not a *relation* between it and (a point in, or period of) time.
- **Trouble no. 2: no contingent properties!** If a material object just *is* the package of its properties, then it has no contingent properties. We want to say that this chair *could* become blue, but a blue chair would not be *this* chair since this chair *is* a bundle of properties, including redness and excluding blueness.
- **Trouble no. 3: the Identity of Indiscernibles!** The theory entails the Identity of Indiscernibles:

(IdIn) If for every property P , $P(x)$ iff $P(y)$, then $x = y$.

But this is unacceptable. If an object just *is* the bundle of its properties – if properties are the only constituents of material objects –, then there cannot be two objects which are bundles of exactly the same properties: qualitative indiscernibility (sharing of all the same properties) is sufficient for identity. But of course, qualitative indiscernibility is not sufficient for identity (Black [1952]): just think of the two indiscernible spheres above. Therefore, the bundle theory is false.

- One could distinguish a nucleus of essential properties and a periphery of contingent ones. So this chair *is* just the sub-package of all its package of properties (including in the bundle, say the property of being a chair, and excluding the property of being red). However (van Cleve [1985]), this does not save the theory from entailing (IdIn): if a material object *is* just the sub-bundle of its essential properties, we cannot have two things with the same essential properties, which we want to have
- Hochberg [1960] has proposed that the identity of bundles does not depend entirely on the identity of their garden-intuitive properties. For instance, the two allegedly indiscernible spheres – call them a and b – could differ because of their *haecceitates*. The *haecceitas* of an object (“thisness”, in bad English) is a property that can be exemplified, by definition, only by *that* object: the property of being identical with that object. So sphere a has the property of being *identical with a*,

which sphere *b* lacks, and *vice versa*; they are not indiscernible. But *haecceitates* are controversial, and many philosophers deny them the status of properties (Lewis [1986], Wiggins [2001]).

3. The theory of tropes

- A promising modification of the bundle theory appears to avoid its troubles: it makes use of *tropes*. A philosophical tradition going from medieval nominalism (Ockham) to both modern rationalism (Leibniz) and empiricism (again, Hume) introduces the notion of *accidens individualis*: one can think of the attributes of a given material objects not as universals, or properties, recurring in different places (*redness* and *rectangularity*, being universal, can recur here, there, and there), but as *individual* things themselves (the *redness of this chair*, the *rectangularity of this table*, etc), with a unique spatiotemporal location. These have been called *tropes* later.
- Tropes are taken by some (e.g. Stout [1923]) as *primary* entities (the basic “elements of being”: Williams [1953]). One can explain both particular, concrete objects and properties (as universals) taking the notion of trope as primitive or fundamental:
 - (a) **Particular, concrete objects are not bundles** of properties, but **of co-localized tropes** of different kinds: this chair is the package of *its* redness, *its* shape, *its* mass, etc. Its unity comes from their being all here, in this spatiotemporal region.
 - (b) Properties may be explained as groups of tropes of the same kind: so the redness of this chair, of that pencil, of ... etc. etc., taken together with all the other tropes of redness, constitute the property of redness.
- Trope theory has many subscribers (Simons [1994], Campbell [1990], Bacon [1995], and Friederike). One can buy tropes without buying any *bundle* theory of objects. However, explaining material objects as bundles of tropes avoids the troubles of ordinary property-bundle theory, for instance:
 - (1) It does not entail (IdIn): two qualitatively indiscernible spheres are different, for they do not share the same tropes; the colour and shape of sphere *a* are *its* colour and *its* shape, so they are numerically distinct from the colour and shape of sphere *b*, although they are qualitatively alike.
 - (2) It also may not have problems in accounting for the phenomenon of change by distinguishing a nucleus of essential tropes and a periphery of accidental tropes: also two sub-packages of essential tropes can be qualitatively identical, but discernible (one is a package of these tropes, the other is a package of those tropes, so, again, no problem with (IdIn)).

3.1 ... And its problems

- **Trouble no. 1: tropes cannot be primary!** It’s all well with tropes, but can we take the notion of trope as conceptually *prior* to those of particular object and property? After all, in order to understand what a trope is, you have to appeal both to objects and to properties. *The redness of this chair*, you understand the notion by reference to this chair (an object) and to the property of being red. How could you explain, then, objects and properties as, respectively, bundles of co-localized tropes of different kinds, and groups of sparse tropes of the same kind?
- **Trouble no. 2: tropes are unintelligible!** (van Inwagen [2001]). The tropes that compose this chair are often supposed to be structural, but non-spatiotemporal parts of the chair (see Lewis [1986]: 64). However:

For me, structure (< *structus*, pp. of *struere*, to heap together, arrange) is at root a spatial concept, and the questions about the structure of a chair that I can understand are questions to be answered by carpenters, chemists, and physicists. I concede that the concept of structure, has intelligible non-spatial extensions in many areas such as logic, linguistics and mathematics. I do not object to the B-

[ergmann-like]ontologists' use of "structure" on the ground that it is an extension of a spatial concept to a non-spatial domain. I object to it on the ground that it is an extension I do not understand of a spatial concept to a non-spatial domain. I understand (thanks to the explanations of logicians, linguists, and mathematicians) what it is for a proof, a sentence, or an algebra to have a structure [...]. What I cannot see is how a chair could have any sort of structure but a spatial or mereological structure. And, in the matter of mereological structure, I cannot see how a chair could have any parts but smaller spatial things – bits of wood and the more esoteric spatial things we learn about from chemists and physicists. To take one example, I have never been able to think of "tropes" – which most of their proponents say are parts of the things whose tropes they are – as anything but idealized coats of paint. (Van Inwagen [2001]: 2).

- **Trouble no 3: too many tropes?** (Armstrong [1978]). It is essential that tropes do not exhaust the spatiotemporal region they occupy: this chair is a bundle of many co-localized tropes of different kinds (its colour, its shape, etc., are all here). Could it be the case that the trope consisting in the shape of this chair is co-localized with other tropes of the *same kind*? Could there be many tropes of the same kind in the same place? If material objects are bundles of tropes, this may entail that we have many co-localized material objects (i.e., many bundles in the same place at the same time), which would be a problem: objects should be concrete: they should exhaust the spatiotemporal region they occupy.
- A possible reply: this may be a problem with the idea that the structure of material objects consists *only* in their being *bundles* of tropes. It is not a problem for the notion of trope itself.

4. The theory of substance

- This is possibly the prevalent position on material objects in nowadays analytic philosophy. It goes back to Aristotle and his substantialism (see e.g. *Physics* II, 1 and 8, *Categories*, 5). Nowadays' theorists of substances are sometimes called *neo-Aristotelians*. **Material objects**, according to this theory, **are (primary) substances**. But what is a substance?
- The theory of substance is based upon a distinction between ordinary properties, such as *being red, dirty, circular*, and so-called *sortal* properties, such as *being a man, a stone, a chair, an insect*. Sortal properties provide (or can be employed within) an answer to the question: *what is it?* Sortal predicates (those predicates which denote sortal properties) "divide reference", and categorize the various objects of our world into kinds – they are also called "individuating predicates", "articulative predicates", "substance names", "shared names", etc. (Frege [1950]: § 54; Strawson [1959]: 168-9; Quine [1960]: § 19; Lowe [1989]; Wiggins [2001]: Ch. 3).
- I couldn't improve David Wiggins' exposition of the point:

If somebody claims of something named or unnamed that it moves, or runs, or is white, he is liable to be asked the question by means of which Aristotle sought to define the category of substance: *What is it that moves (or runs or is white)?* Perhaps one who makes the claim that something moves does not need to know the answer to this question [...]. Yet it seems certain [...] that, for each thing that satisfies a predicate such as 'moves', 'runs' or 'white', there must exist some known or unknown, named or nameable, kind to which the item belongs and by reference to which the 'what is it' question *could* be answered (Wiggins [2001]: 21).
- "Boy" is also a sortal term and boys become men, but *boy* is, in Wiggins' jargon, a *phased* sortal property. Now, "a phased or restricted sortal predicate can always be supplanted *salva veritate* by a comprehensive unrestricted sortal predicate or (as I shall say) a substance predicate" (Wiggins [2001]: 63), and any object has to satisfy its own *substance* predicate *throughout its career* as an object.
- This way, the theory of substance provides a distinction between *accidental* and *essential* properties and an intuitive explanation of change and becoming. This chair is accidentally red, that is, it *could* become blue and keep being this chair; And Socrates, who is sitting, can stop sitting and stand up.

What the chair and Socrates can never cease to be is, respectively, a *chair*, and a *man*: these sortal properties accompany the two throughout their career. Such sortal properties are, or constitute, the respective *essences*.

- This is often phrased in PW-talk by saying: Socrates is a man *at all possible worlds* (or, better, at all the possible worlds at which Socrates exists). Such counterfactual conditionals as:

If Socrates were a chair, then...

have *impossible* antecedents: if Socrates were a chair, he (it?) would not be *Socrates*, that is, a man.

4.1 ... And its problems

- **Trouble no. 1: the distinction between sortal and non-sortal properties doesn't work!** (Varzi [2007]) How can we trace a boundary between sortal and non-sortal predicates? Some sortalists have claimed that the distinction between sortal predicates and ordinary predicates can more or less be mapped to the linguistic distinction between nouns on the one side, and adjectives and verbs on the other: nouns allow us to count objects, therefore, to settle identities and differences, whereas adjectives and verbs can only describe the features and activities of things that we have already identified (e.g. Strawson [1959]). But:
 - (a) On the one hand, we talk of *scars*, *holes* and *cuts* as easily as we talk of men, stones and chairs. We can count scars, holes and cuts. But these do not look at all as substances (“autonomously existing”, self-connected, unitary material beings, like men and chairs).
 - (b) On the other hand, some nouns derive from adjectives or verbs: “building”, “student”, “runner”, etc. However, we may want to consider buildings, students and runners as real substances. According to Quine, the distinction between nouns and verbs/adjectives may be linguistically robust, but it has no metaphysical import (Quine [1958]).
- **Trouble no. 2: too few material objects?** (Varzi [2007]). This comes in two shapes:
 - (a) Our pre-analytic idea of *material object* includes things that may not count as substances from the (neo-)Aristotelian point of view: does a bunch of bananas have an essence? A bikini? Does each brick in the house have an essence? There would be too many overlapping essences there. We may want to count a single brick as a full-fledged material object, therefore it should fall under some sortal, substantial property, such as the property of being a *brick*. Can the brick lose its substantial property (and therefore, cease to exist), due to the mere fact that it is embedded in a house? After all, no part of the brick has been modified. Therefore, the theory of substance does not account for our intuitive idea of material object.
 - (b) Sortalists typically don't want to count arbitrary mereological sums as full-fledged substances or objects. A man is a substance, perhaps a chair is a substance, but there is no substance made exactly of my left ear, the northern half of the tower Eiffel, and the empty set of set theory. Which would be the essence of such an object? Under which sortal kind could it fall?
- However, there is not principled way to restrict Mereological Composition, that is, the principle according to which, given two objects x and y , there exists their mereological sum $x+y$ (Lewis [1986]).
- The celebrated Lewisian argument, roughly, goes as follows: our restrictions on composition depend on vague intuitions and admit of degrees (men, chairs, bikinis, bunches of bananas, football teams, arbitrary sums...). But the issue whether, given that x and y are Out There, their mereological sum $x+y$ is Out There too, can be formulated in a (fragment of) language in which nothing is vague. Therefore, it cannot be given a vague answer: either there is such a thing as $x+y$, or there isn't. So “no restriction on composition can be vague. But unless it's vague, it cannot fit

the intuitive *desiderata*” (Lewis 1986, 213). Consequently, any restriction on composition would be completely unmotivated:

We are happy enough with mereological sums of things that contrast with their surroundings more than they do with one another; and that are adjacent, stick together, and act jointly. [...] We have no name for the mereological sum of the right half of my left shoe plus the Moon plus the sum of all Her Majesty’s ear-rings, except for the long and clumsy name I just gave it [...]. It is very sensible to ignore such a thing in our everyday thought and language. But ignoring it won’t make it go away. (Lewis [1986]: 211-3)

5 The stuff theory

- This is relatively recent, and is one of the possible outcomes of an extreme rejection of the notion of essence, and of the idea that the distinction between sortal and non-sortal properties makes sense. It has no strong historical antecedents, but I would count Aristotle’s theory of *prime matter* in the *Metaphysics* as a forerunner:

[Prime matter] is that of which other things are predicated, whilst it itself is not predicated of anything else (*Met.* 1028b 35).

- According to stuff theory, material objects are nothing but **portions of the material content of space-time** (Sidelle [1989], Heller [1990], Jubien [1993]). More precisely: Out There in the world we have only *matter* (four-dimensional matter: stuff theorists are, typically, four-dimensionalists – but we’ll talk of four-dimensionalism in the following). What we qualify as “objects” are just **hunks of matter or stuff**.
- Which ones? Whatever hunks we want! Matter displays various properties in various places (*it* is red here, *it* is cold there, *it* is rectangular here, *it* is ball-shaped there). We “carve” and select some spatiotemporal portions of it: but this depends on our epistemic apparatus, not on the world itself. We tend to carve, and to qualify as “objects”, those four-dimensional hunks of matter that display interesting or salient features:

Matter, or stuff, is the real, mind-independent stuff of the world. It is prior to objects because it is what we, more or less informed by our interests, carve up *into* objects. (Sidelle [1998]: 432)

- The stuff theory can respect Unrestricted Composition: you can “carve”, and count as an object, whatever you want. Of course, if you concentrate too much on such Lewisian objects as the mereological sum of the right half of his left shoe plus the Moon plus the sum of all Her Majesty’s ear-rings, and you lose contact with everyday “garden” objects, such as men and chairs, you may have problems in organizing your everyday life!

5.1 ... And its problems

- **Trouble: no creative conventions!** This is a recent theory and I am not aware of many objections in the literature. I know of one, though (Steen [2006]): it goes against the version of the theory which claims (as in Sidelle’s quotation) that matter is “prior to objects”, if interpreted in the sense that our carving activities and conventions “informed by our interests”) *bring* objects into existence. For conventions and stipulations, *as* conventions and stipulations, can give existence to nothing at all – at least insofar as we talk of material objects as mind-independent entities.
- Of course, I can bring into existence a chair: I pick the pieces of wood, cut them, etc. But I cannot *stipulate* a material object into existence:

I do not, of course, deny that one can appropriate or invent a word or phrase and stipulate a meaning for it [...]. I can stipulate that, or adopt the convention that, I shall call something a “dwod” if it is either a dog or a squid. And I can go on to say (correctly) that there are dwods; but this thing that I can go on to say is correct only because there are animals of at least one of the kinds *dog* and *squid*. Whether there are dogs or squid, however, is not a matter that can be settled by establishing conventions. [...] Suppose that X, Y and Z are three atoms. [...] One might say, “I hereby stipulate that there exists an objects that has X, Y, Z and no other atoms as parts”. But then one might say, “I hereby stipulate that a rich aunt has died and left me ten million dollars”. Neither of these sentences makes any sense. One stipulates not facts but meanings for words (van Inwagen [1990]: 7-8).

- However, this objection does not work against a “realist” interpretation of the theory: objects *are* Out There – they are all there, all together: this chair is there, just like Lewis’ mereological sum of his left shoe, etc. etc. What we actually do is just selecting, and focusing *our attention* to, things to which we are “perceptually sympathetic”, for they “contrast with their surroundings more than they do with one another; and that are adjacent, stick together, and act jointly”. This is just a matter of degree, anyway: we focus our attention also on scattered objects for whatever conventional reason: a bikini; the United States as including a separate part such as Alaska; or the dozens of different buildings that make up the University of Padua as a physical entity.

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