

## BOOK REVIEWS

Lowe, E. J., *The Four-Category Ontology: A Metaphysical Foundation for Natural Science*, Oxford: Clarendon Press, 2006, pp. xii + 222, £49.00 (cloth), £21.00 (paper).

What fundamental ontological categories are needed to provide a metaphysical foundation for natural science? Contemporary debate has focused on three candidates: a category of *objects*, or *individual substances*, a category of *universals*, and a category of *tropes*. Commonly, one or more of these categories is rejected, or reduced to the others: the most popular two-category ontology posits only objects and universals; the most popular one-category ontology (nowadays) makes do only with tropes. E. J. Lowe argues that all three categories are needed, and that, moreover, the category of universals should be subdivided into two equally fundamental categories: one of *substantial universals*, or *kinds*, whose particular instances are objects; and another of *property-universals*, whose particular instances are tropes (or *modes*, as Lowe prefers to call them). Thus, there are two fundamental categories of universals and two fundamental categories of particulars. This is Lowe's *four-category ontology*, roughly that propounded by Aristotle at the beginning of the *Categories*.

Whence four categories? Lowe maintains that the Fregean distinction between object and concept 'conflates two traditional metaphysical distinctions—the distinction between substance and property and the distinction between particular and universal' [58]. According to Lowe, these two distinctions cut across one another, generating *four* fundamental ontological categories. Substances are *characterized by* properties: Fido's particular whiteness, a trope, characterizes Fido; the universal whiteness, although it does not characterize the substantial kind, *dog*, since dogs are not by nature white, characterizes the kind, *polar bear*. Particulars *instantiate* universals: Fido instantiates the kind, *dog*; Fido's whiteness trope instantiates the universal, whiteness. (This scheme is neatly displayed in a diagram Lowe calls 'the ontological square'.) The relation between an object and its property universals (called by Lowe *exemplification*) is curiously indirect, and can come about in two different ways. These different ways correspond, according to Lowe, with the distinction between occurrent and dispositional predication. Fido exemplifies the universal whiteness in virtue of being characterized by a trope that instantiates the universal whiteness; thus Fido is occurrently white. Lars the polar bear, however, exemplifies the universal whiteness (also) in a different way, by instantiating a kind that (by nature) is characterized by the universal whiteness; thus

Lars, but not Fido, is dispositionally white. Instantiation and characterization do not commute.

So much for a rough summary of the view. Lowe spends a good part of the book arguing that all four categories are needed to provide a foundation for natural science. Briefly, universals are needed to provide an adequate non-Humean theory of laws of nature; tropes are needed to provide an adequate account of the causal relation and, in particular, perception; substantial universals are needed in addition to property universals to ground the distinction between sortals and adjectives, and to provide a simple and natural account of natural necessity. (A reader steeped in modern physics might well doubt whether this ontology has application to current, as opposed to Aristotelian, science. The little that Lowe has to say about this [19, 75] will do nothing to assuage the worry.) In the course of further defending and applying the four-category ontology, Lowe covers many other topics central to contemporary metaphysical debate. There are chapters on scientific essentialism, ontological dependence relations, metaphysical realism, and the theory of truthmaking.

There is much to admire in this book. Lowe has a lucid, easy-going prose style that keeps the reader well apprised of where she has been, and where she is going. And the book is chock full of bold metaphysical conjectures and interesting supporting arguments. It would serve as an excellent ‘opinionated introduction’ to fundamental ontology (in the style of Armstrong, but with somewhat different opinions). I should warn the reader, however, of two idiosyncratic features of the book. First, there is an inordinate amount of repetition, resulting from most of the chapters being lightly edited versions of previously published papers. For example, the basic summary of the four-category ontology, and the accompanying diagram of the ‘ontological square’, occurs with minor variations in each of the first eight chapters. I suspect the book could have been half its current length without loss of content. This repetition will not bother—and may even benefit—a reader who picks a chapter here and there on a topic of particular interest; but it will likely annoy a reader who traverses the book from start to finish. Second, the arguments presented in the book typically do not probe very far beneath the surface. Instead, Lowe provides copious references to his other books and articles where it is suggested the reader can find further details. (Indeed, around half of the citations in the book are to Lowe’s own works.) I have not followed up these references to determine whether they deliver the promised goods. In any case, a reader who is looking for an in-depth discussion of a particular topic will often be disappointed.

There are dozens of arguments in the book worthy of extended critical discussion, but I have space here only to focus on one. Lowe argues, both in chapter 2 and chapter 6, against what he calls the strong doctrine of immanence for universals. He accepts the doctrine that universals are immanent in a weak sense: every existing universal is instantiated. But he finds the doctrine that universals are immanent in a strong sense—that they are wholly present in many different places at the same time—incoherent. He argues thus [24]:

The relation *being wholly in the same place as* appears to be an equivalence relation and therefore a symmetrical and transitive relation, which poses the following difficulty. Suppose that tomatoes *A* and *B* exemplify exactly the same shade of redness and that this universal is both wholly in the same place as *A* and wholly in the same place as *B*. Then, it seems to follow, given the symmetry and the transitivity of the relation *being wholly in the same place as*, that tomato *A* is wholly in the same place as tomato *B*—which we know to be necessarily false, given the non-identity of *A* and *B*.

A defender of strong immanence will suspect equivocation. Suppose *x is wholly in the same place as y* is defined as: for every place *p*, *x* is wholly in *p* if and only if *y* is wholly in *p*. (*x is wholly in p* can be taken to mean: *p* is a minimal region such that all of *x*'s parts are in *p*.) Then, indeed, *is wholly in the same place as* is an equivalence relation, but the premise that tomato *A* is wholly in the same place as the universal is false: there is a place *p*, the place that tomato *B* is wholly in, such that the universal, but not tomato *A*, is wholly in *p*. Presumably, then, Lowe intends *x is wholly in the same place as y* to be defined instead as: there is some place *p*, such that *x* is wholly located at *p* and *y* is wholly located at *p*. But on this definition, the premise that *is wholly in the same place as* is an equivalence relation is false: for if a place that *x* and *y* are both wholly in is distinct from a place that *y* and *z* are both wholly in, there needn't be any place that *x* and *z* are both wholly in; transitivity fails. Indeed, on this (the standard) definition, the claim that entities can be multiply located is just the claim that *is wholly in the same place as* fails to be a transitive relation. Thus, unless Lowe can provide independent support for the premise in question, his argument has no force. But this Lowe never does; instead, he merely challenges theorists who hold that universals are wholly present in many different places to provide 'a much more perspicuous account of what they could possibly mean by saying this' [24].

Fair enough. So consider the following standard account. Ordinary particulars are 'composed' of property-universals together with some element that makes for particularity, maybe a region of space (or spacetime) itself, maybe a 'thin' particular that stands in spatial (or spatiotemporal) relations to other 'thin' particulars. (For simplicity, I ignore relation-universals and substantial universals. Also, whether the 'composition' of ordinary particulars is mereological, or some non-mereological analogue, matters not to present concerns.) The location of the ordinary particular and of its universal components is determined by the location of its unique particular component. Thus, an ordinary particular is wholly in the same place as each universal that it instantiates. When two ordinary particulars each instantiate the same universal, they have that universal as a common part. They literally overlap. That common universal will then be wholly in the same place as each of the ordinary particulars that instantiate it, even though the particulars are not wholly in the same place as one another. And, thus, *is wholly in the same place as* fails to be a transitive relation.

This picture is perspicuous enough, it seems to me, but does it make universals *genuinely* located? That depends. If the universals do not

themselves stand in any spatial relations, and they are ‘in a place’ solely in virtue of bearing the instantiation relation to a particular that is in that place, then perhaps the universals have location only in a derivative sense. That will depend on whether *instantiation* is an external relation, or somehow something more intimate. If the former, then universals are no more genuinely ‘in a place’ than, say, I am genuinely ‘on the moon’ when I watch a live television-feed from a camera on the moon. If the latter, it will depend on how this mysterious intimacy is understood. (Compare the question whether a singleton is located where its member is: it all depends on the nature of the membership relation).

Fortunately, these subtleties can be bypassed by holding instead that spatial relations apply directly to the universals, the very same relations that apply to the particulars. In that case, the universals are directly implicated in the spatial structure. Of course, the spatial relations in question will not satisfy the usual axioms, which would require the transitivity of spatial coincidence. Perhaps these relations are then not even properly called ‘spatial’. But that would be a point of language, not ontology. Certainly, there is no problem modelling the resulting structure mathematically. Perhaps Lowe would say that something more than a mathematical model is needed to establish coherence. But then what?

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Pettit, Philip, *Made With Words: Hobbes on Language, Mind and Politics*, Princeton and Oxford: Princeton University Press, 2008, pp. 183, US\$29.95 (cloth).

Several recent writers have emphasized Hobbes’s materialism, some going on to deal with the question of how he can give a materialist account of the mind. Philip Pettit argues, in admirable detail for so short a book, that on Hobbes’s account it is language that gives humans an active mentality as opposed to the passive mentality (composed simply of motions in matter) that we share with non-human animals. The three great advantages that language makes available to people are the ability to use meanings of words to reason about the world (chapter 3), the ability to personate (chapter 4), and the ability to incorporate (chapter 5). The great disadvantage that it brings along with these is the ability to reason about the future and to worry about it, being famished by even future hunger, which leads people into a search for security and the power to guarantee it (chapter 6), which, in turn, leads to antagonistic relations between people until (as Hobbes sees it) an absolutist State is established. From there, Pettit proceeds to an account and assessment of Hobbes’s political theory.

Pettit begins with an account of the natural mind, shared with non-human animals: motion conveyed through sense organs to produce internal