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The No-Category Ontology

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Abstract

In this paper we argue that there are no categories of being—at least not in the robust metaphysical sense of something fundamental. Central arguments that metaphysicians provide in support of fundamental categories, such as indispensability and theoretical utility arguments, are not adequate to guarantee their existence. We illustrate this point by examining Jonathan Lowe’s [2006] four-category ontology, and indicating its shortcomings. In contrast, we offer an alternative, no-category ontology, which dispenses with any fundamental categories of being, and provides a deflationary understanding of any categorization in terms of concepts. Concepts, we insist, as opposed to fundamental ontological categories, can always be revised, refined, and recast. A distinctive deflationary, no-category ontology then emerges.

1. Introduction

Are there categories of being, that is, robust metaphysical categories of the way things are fundamentally? Metaphysicians have advanced two central arguments in support of such ontological categories: indispensability and theoretical utility arguments. In this paper, we argue that none of them is adequate to guarantee the existence of any such things. To give focus to the discussion, we critically examine Jonathan Lowe’s four-category ontology (Lowe [2006]). In contrast, we provide an alternative, no-category ontology: it dispenses with any fundamental categories of being, and provides a deflationary understanding of any categorization in terms of concepts. Concepts, we argue, as opposed to fundamental ontological categories, can always be revised, refined, and recast. The result is a distinctive deflationary, no-category ontology.

2. Arguments for the Existence of Categories (of Being)

Ontological categories, or categories of being, are said by their proponents to capture the *way things are* rather than our *representation* of their ways of being. Following a long-standing tradition in metaphysics, *metaphysical* categories exhibit the deep ontological status of things. Two crucially different approaches to metaphysics are at stake. According to what can be called the *ontology-first* approach, metaphysics is characterized as the study of the fundamental features of reality. This is the earliest self-understanding of metaphysics, a tradition that can be traced back to Aristotle, and arguably the most significant as well. In contrast, there is what can be called the *representation-first* approach, according to which metaphysics is characterized as the study of *representations* of the fundamental (or, at least, central) features of reality. This approach, which is similarly part of a celebrated tradition, can be traced back to Kant. The focus of this approach is on the mechanisms of representation of the world, and their accompanying limitations. As a result, metaphysics is significantly more anthropocentric than the ontology-first would recognize, and the categories

studied are ultimately categories of thought rather than of being. These are, of course, fundamentally different ways of characterizing metaphysics, and the corresponding status of categories.

Jonathan Lowe offers a detailed defense of the ontology-first approach (Lowe [2006]; see, in particular, pp. 5-8). One of his goals is to argue that metaphysics, understood in terms of ontology-first, has made significant progress precisely by uncovering the proper ontological categories (in particular, the four-category ontology that Lowe favors).

It is common in metaphysics (and elsewhere) to argue for a new ontology by relying on claims that the ontology is indispensable to either the workings of the world or to the construction of an adequate or ideal theory of the domain in question (Colyvan [2001]), or else by relying merely upon the utility of constructing a theory in terms that range over the (kinds of) objects that are defended by that argument. The important feature of each form of inference is that either the facts of indispensability or the facts of utility are said to provide warrant for ontological commitment to what is indispensable or to what provides utility in theory construction.

Indispensability considerations are deemed to warrant ontological commitments to objects that are indispensable for certain tasks: to explain a class of phenomena, to express certain notions, to characterize a given domain. If without the commitment to certain objects, one cannot carry out these explanatory, expressive, or characterization tasks, the objects are then indispensable for the theoretical tasks at hand. On this formulation, indispensability is a modal notion: it is not possible to implement the relevant theoretical tasks without being ontologically committed to the relevant objects. Thus understood, indispensability is a strong, metaphysically robust notion. At least on the face of things indispensability claims go beyond the mere pragmatic limitations that we bring to our theoretical tasks. Not only could we not accomplish those tasks without the indispensable ontological units, no one else could do so.

The indispensability argument is central to Jonathan Lowe's general defense of the fairly traditional project of metaphysics, but also to his articulation of the need for a metaphysical type of possibility and for the grounds for embracing distinctively metaphysical objects of the sorts covered by his four primary ontological categories: kinds, attributes, modes, and objects. Each plays a metaphysical role that it and only it can play, not only within the philosopher's domain of metaphysics, but also in the various domains of the specialized sciences which, according to him, could not be as they are, were there none of the objects with which he populates his four-category ontology. Thus he says of metaphysical possibility:

A key ingredient in my defence of metaphysics is the articulation of a distinctive and, in my view, *indispensable* notion of *metaphysical possibility*—conceived of as a kind of possibility which is not to be identified with physical, logical, or epistemic possibility (Lowe [1998], p. v; the first italics are ours).

Not only is metaphysical possibility the primary kind of metaphysically-significant possibility, it should also be distinguished from other kinds of possibility that do not satisfy the indispensability requirements, to the extent that they can be formulated in terms of other primitive (and indispensable) concepts.

Metaphysical possibility is not, according to Lowe, the only indispensable component of a satisfactory metaphysics. Facts have the same status:

Indeed, facts seem to be ontologically *indispensable*, certainly as truth-makers and perhaps also as causal relata. We say, for instance, that the fact that Mars is red makes it true that Mars has a colour (Lowe [1998], p. 228; the italics are ours).

Note the emphasis on *ontological* indispensability: on Lowe's view, it is not possible to implement any adequate metaphysical theorization without ontological commitment to facts as truth-makers, or as causal relata. This commitment is made ultimately on the grounds of their indispensable role.

More importantly, as Lowe argues, his own four-category ontology is advanced on the very same basis of indispensability:

we should gravitate towards the fourth system of ontology identified earlier, the system which acknowledges three distinct ontological categories as being fundamental and *indispensable*—the category of *objects*, or individual substances; the category of *universals*; and the category of tropes, or, as I shall henceforth prefer to call them, *modes*. It is then but a short step to my preferred variant of this system, which distinguishes between two fundamental categories of universal, one whose instances are objects and the other whose instances are modes (Lowe [2006], pp. 15-16; the first italics are ours).

While there are affinities between indispensability arguments and those framed in terms of theoretical utility, according to the latter ontological units, be they categories or otherwise, should be posited in light of the resulting significant theoretical benefits: given the ontology so defended, one is able to explain a range of relevant phenomena, characterize the given domain of objects and express relations among them. So far, theoretical utility arguments are like theory-focused formulations of indispensability arguments. We can do things with theories when they are framed in terms ranging over the new ontology. While indispensability arguments depend on the claim that these things could not be done at all without the theoretical resources to range over the desired ontology, other forms of theoretical utility arguments are essentially comparative. A more unified overall approach emerges, or a simpler ontology results, when theory is formulated in terms of the new ontology than alternatives permit. There are, thus, theoretical virtues associated with positing ontological categories—simplicity, unification, expressive and explanatory power—and the overall greater degree to which metaphysical theories with deep, robust, objective categories of metaphysical objects possess these virtues provides better reasons for one's commitment to the categories in question, when compared to theories that lack these categories and thus possess a lesser overall degree of these virtues.

These two forms of argument account for the significant role that ontological categories play in metaphysics. Considerations along the lines suggested by these two arguments are often invoked in attempts to provide the basic structures posited by ontology-first metaphysicians.

According to Lowe, there are four fundamental categories: kinds (substantial universals), attributes (non-substantial universals), modes (property/relation-instances), and objects (individual substances). On his view, the need for these four categories emerges from their *indispensability*. He notes what accepting these four categories provides:

The four-category ontology—as I like to call it—provides, I believe, a uniquely satisfactory metaphysical foundation for natural science. It can, for instance, account for the ontological status of natural laws by regarding them as involving universals, but not simply property-universals (Lowe [2006], p. 16).

There are, of course, different ways that one might suggest that these categories are indispensable, and different projects or theories for which they are indispensable. Lowe makes his suggestion upon having considered a number of different positions, each of which he takes to be characterized by different goals. Trope theorists, for example, he takes to be motivated by “by a strong desire for ontological economy and a radically empiricist stance in epistemology, inspiring frequent appeals to Occam's razor and a nominalistic hostility to belief in the existence of universals” (Lowe [2006], p. 11). There are, however, metaphysicians who, such as Lowe himself, wish to be realist about universals, and these theorists are motivated “at least in part by the desire

to provide an adequate metaphysical foundation for natural science, including most importantly laws of nature” (Lowe [2006], p. 11). So, one deciding criterion for whether the best metaphysical account is the extent to which one has successfully provided an account of natural laws. Prominent in this tradition stands, of course, David Armstrong [1983], with his suggestion that there is a nomic necessitation relation between universals. Lowe counts any theorists who “hold that laws of nature can properly be understood only as consisting in relations between universals” (Lowe [2006], p. 11) as appropriate company to Lowe’s account.

For Lowe’s account to be satisfactory by his own lights, his four categories must be indispensable on any realist account of laws of nature according to which they consist in relations between universals (however this relation is specified). Nonetheless, before we turn to realist rivals, we pause to reflect upon what motivates Lowe’s realist stance.

Against his nominalistically inclined interlocutor, Lowe notes that a regularity view of laws:

renders inexplicable our conviction that statements of natural law entail (or at least support) corresponding counterfactual conditionals. We want to say that if an actually planetless star had had a planet, then that planet would have moved in an elliptical orbit: but this cannot be entailed by the fact that each and every actually existing planet moves in an elliptical orbit (Lowe [2006], p. 13).

Those nominalistically inclined will resist the need for a metaphysically robust understanding of laws to account for such counterfactual conditionals. Nominalists do not deny that planets, given that they are spatiotemporal objects, are subject to the empirical regularities that all other planets are, and in fact nothing more is needed to account for the counterfactual that had a planetless star had a planet, that planet would have moved in an elliptical orbit. If our world is one in which (all) planets have elliptical orbits, then had one of the planetless stars in our world had a planet, its planet would have travelled in an ellipse.

This makes salient one of our primary concerns for this paper. In Lowe’s own words his account will provide a “uniquely satisfactory metaphysical foundation for natural science” (Lowe [2006], p. 16). On which non-question-begging basis, however, is the satisfactoriness of the account determined? By targeting satisfactory metaphysical accounts, Lowe seems to be only in the game of seeking out satisfactory realist views. We provide an alternative interpretation of his four-category ontology that rivals a realist reading. A rival alternative that accounts for laws, as contrasted with dismissing or dispensing with them, undermines Lowe’s claim that he has in fact provided an indispensable four-category metaphysics for a realist view. Whether our proposed interpretation is satisfactory or not we leave it open, but it is not something determined by favoring a realist metaphysics from the outset, as contrasted with the somewhat peculiar fascinations that motivate somewhat less metaphysical options. This would, *ipso facto*, make any non-realist attempt at a metaphysical foundation for natural science unsatisfactory from the start. It would be best not to settle this issue by fiat.

What, on Lowe’s account, should a satisfactory metaphysics be able to achieve? He mentions four demands:

- (a) The metaphysics should account for the ontological status of natural laws (Lowe [2006], p. 15).
- (b) The metaphysical account of these laws should involve kinds and either properties or relations, but without second-order (relations amongst) universals (Lowe [2006], p. 16).
- (c) The metaphysics should account for the distinction between dispositional and occurrent (or ‘categorical’) states of objects. For example, it should accommodate the distinction between an object’s being soluble and its actually dissolving (Lowe [2006], p. 17).
- (d) The metaphysical account should explain what ‘ties together’ the particular properties. Suppose, for instance, that properties are constituents of an object. In this case, an account is

needed of in virtue of what they are tied together (Lowe [2006], p. 18).

Centrally, though, Lowe believes that his account will be superior for the purpose of accounting for natural laws:

So long as the empirical sciences invoke laws for explanatory purposes and appeal to perception for empirical evidence, the four-category ontology will, I believe, adequately serve as a metaphysical framework for the scientific enterprise (Lowe [2006], p. 19).

But he also interestingly suggests that providing a satisfactory metaphysical framework will be not merely adequate but, more importantly, indispensable for the success of science:

That *some* metaphysical framework is necessary for the success of that enterprise and that its formulation is not the business of any special science, but only that of the general science of being, or ontology, I hope to be by now beyond dispute (Lowe [2006], p. 19).

If we accept Lowe's conclusion that *some* metaphysical framework is needed for the success of science and accept furthermore that his four-category ontology is indispensable to the most satisfactory metaphysics for natural science, his initial indispensability argument is persuasive. *Some* framework with *some* metaphysical character is needed for accounting for prominent features of the empirical world systemically reported by sophisticated scientific theories. We cannot, however, assume that some metaphysical framework, other than the four-category ontology, will not both do and do even better at articulating the nature of natural laws, dispositions and occurrent states, and the like. The metaphysician's task is not merely to satisfy the predilections of metaphysically realistically oriented metaphysicians. Unless some stronger tie can be established between successful science and best metaphysics, it remains hard to evaluate the claim to satisfaction that Lowe has put forth.

Lowe does however provide an independent argument that his account is superior to any prospective non-realist account, when it comes to accounting for why the exact kinds that we find in nature are exactly as they are and not otherwise. He characterizes it in the form of a *challenge*:

Why is it that of all the possible combinations of powers in fundamental particles, only *some* combinations are found in nature? Why, say, do we not find a particle with the rest mass of the neutron but the charge of the electron? (Again, never mind the scientific accuracy of the example: I use it purely for illustrative purposes.) It seems to me that only someone who takes laws of nature seriously, as involving universals, has an explanation for this state of affairs (Lowe [2006], p. 135).

It is difficult to assess what we ought to make of a challenge of this kind. There is an abundance of different possible states that might have obtained that do not, as a matter of fact, obtain, but why should we accept any particular onus of explanation that might come with this observation? There are so many puzzling things about the world, be they about the masses and charges of elementary particles or the physical characteristics of lions, tigers, and bears. Why, exactly, though, do these puzzles point the sober, serious philosopher toward distinctively philosophical (rather than scientific) answers and if philosophical, why distinctively metaphysically substantial (rather than deflationary) answer?

3. Resisting the Existence of Categories (of Being)

We challenge a very specific kind of categories: *categories of being* (or *ontological categories*), that is, fundamental divisions in reality that are invoked in *metaphysical* explanations and characterizations. We, of course, do not challenge that objects can be categorized and characterized,

that there are lions, tigers, and bears, that they are all carnivorous or any of the many run-of-the-mill ways that we classify and describe things. It is only against these categories, metaphysical categories of being that we argue. Our central point is that ontological categories are ultimately dispensable. We argued for these points in turn.

Lowe's case for the four-category ontology rests on the indispensability of each of the four categories. They are certainly not individually indispensable to theories. They have each been done without. Of all, one might easily think that the category of *object* (substantial particular) is the most secure. Common sense and much sophisticated theory are formulated in terms of objects. In many contexts, it is explanatorily useful to group certain things as objects, even though at the fundamental level there may not be any of them, as structural realists insist there are not (see Ladyman and Ross [2007], and French [2014]). On such accounts of fundamental theories, universals are primary and objects are, at best derivative. Universals can be non-substantial (properties and relations) or substantial (kinds). Theories formulated in terms of non-substantial universals are similarly very useful for explaining what red things have in common. They all have in common the property of being red. This does not require the existence of such universals. After all, as nominalists insist, all we need are red things: since each red thing is red, they all are red. That's something all of them have in common, even though one need not reify the ontological category *universal*, or even the specific characteristic, *being red*, as an additional item in the ontology. That there is something that they have in common does not entail that there is some *thing* that they have in common. It is not a thing that they have in common, it is a characteristic, an accurate component of a description not a peculiar metaphysical thing that each has as a component or even to which each is related. Even if we just could not do what we need to do with a theory without nominal vocabulary for properties, nothing follows about there being any ontology that answers to that vocabulary.

Similar considerations apply to substantial universals (kinds): it may be explanatorily useful to group certain objects as belonging to the same (natural) kind. It doesn't follow, however, that there are kinds as an ontological category, that is, the world need not contain any reified entity in a way that makes kind terms singularly referential to *kinds* rather than plurally referential to their instances. In categorizing something as gold, we highlight certain features that gold *things* have. But note that these features may depend on the level of description we are engaged with. Gold things are not reactive at the macroscopic level we live in, but gold molecules are quite reactive at the nanoscale, since they do interact with other molecules in the environment. This suggests that categorization is best understood not ontologically but epistemologically. (We will return to this point below.)

Finally, non-substantial particulars (property- and relation-instances) terms can be explanatorily useful for characterizing objects. Again, nothing requires one to take these categories as being ontological: as nominalists insist, all is needed are red objects, such as Rudolf's nose. *Its* redness does no work that cannot be done by his nose being red. The property instance is not required.

Ontological categories are, thus, ultimately dispensable. The question of whether we are committed to instances of any of these categories is not properly posed. It presupposes that one need to adopt a single ontological stance in response to some explanatory task. Those tasks, however, are highly sensitive to context. Talk of objects is useful in certain contexts, for instance, when describing macroscopic events, but it becomes problematic when we try to make sense of microphysics (assuming certain interpretations of quantum mechanics). Lowe supposes that in order to provide all of the required explanatory tasks a commitment to all four ontological categories is needed, but the very idea of an ontological category creates artificial problems of its own, by inviting reification of classification schemes that are just as easily achieved by the introduction of concepts (a point to which we return below).

Let us now assess the demands that Lowe has suggested for any satisfactory metaphysics (conditions (a) to (d), above). Note, first, that the demands that Lowe has suggested are primarily driven by concerns that preoccupy metaphysicians rather than scientists. This is, of course, not

surprising in light of us being asked to assess the demands for a satisfactory metaphysics, but reflecting on the notion of 'satisfactory', and Lowe's explicit commitment toward providing a metaphysics for natural science, one cannot help but note that none of the demands are driven by science itself. It is, of course, one thing for a metaphysical framework to be useful for successful science and another to be judged for its metaphysical merit relative to the kind of contribution that the resultant metaphysics makes to science. But since Lowe explicitly ties up the assessment of what shall count as an adequate metaphysics with the demands of successful science, one would expect perhaps a more science-driven orientation regarding the criteria for assessing what a satisfactory metaphysics amounts to. One would expect to see detailed attention to the peculiarities of the uses of various instruments when sequencing the human genome or the specifics of quantum field theory or the details of protein synthesis. Instead, we get only the most basic features of (some of) the sciences, such as laws of nature, accidental correlations or dispositions and occurrent states.

In terms of the criteria that are stated explicitly, this is perhaps most vivid in (d). Lowe takes it to be a strength of his position that it manages to account for what 'ties together' the particular properties of objects: in Lowe's words, the *modes* of an object. An object's modes are, according to Lowe, "'particular ways it is': they are characteristics, or features, or aspects of the object, rather than constituents of it" (Lowe [2006], p. 18). This view is juxtaposed to a view of properties as constituents of objects, which, according to Lowe, would need to be tied together somehow in some mysterious way either by being tied to one another or by being attached to some bare particular, a substratum distinct from the properties attached to it. It would seem then that Lowe's account constitutes an advance relative to competing alternatives that run the risk of having properties free floating from one object to another, or 'randomly' coming together to form objects, which clearly goes against our understanding of objects as being persistent entities. In this respect, Lowe is suggesting that his theory has advantages over pure trope theories.

Consider briefly the challenge that Lowe sets himself. It is the very beginning of the problem to which his metaphysical theory is supposed to be a best, even irresistible, solution that there are properties. Not only that, but also that properties are the kind of things that in some sense 'could' be scattered and floating free of any thing that possesses or exhibits them. The very form of the problem with which he begins and with which he motivates his solution is already loaded in a metaphysical way that biases the philosopher's task toward only rather heavy-duty metaphysical theories. Why should we, though, even think at all, much less at the very outset of our thinking about objects, properties, relations, and the like that properties are anything like the kind of thing that could float free of things with those properties? Certainly, this problem is not one prompted by any scientific investigation, theory, or method. No one has ever witnessed orphaned properties that lack possessors, like the smile of the Cheshire cat. Posing the problem this way excludes from serious attention views that treat as incoherent such properties, since properties are always of objects that exemplify them. Certainly it would not seem like anything a prospective rival non-realist view would be committed to in virtue of being non-realist. We are not in any way under pressure to regard properties as the kind of thing that could generate the problem to which the four-category ontology might be a solution. This is suggested to us only by a realist metaphysics that dapples in detachable properties *qua* universals, and objects conceived of as metaphysical coat hangers, to which properties may or may not attach. This is not so much a general constraint on a philosophical theory as a surreptitious nudge in a desired direction.

Furthermore, Lowe believes that his four-category ontology provides us with the tools to make sense of how properties of a *kind* are tied to that kind. According to him properties of a kind are tied to it,

in the laws to which it is subject, in a manner which entirely parallels, at the level of universals, the way in which an individual object's modes are tied to that object. In both cases, the tie is simply a matter of the 'characterization' of a propertied entity by its various properties and consists in the fact that the properties

are 'ways' the propertied entity is (Lowe [2006], p. 18).

Allowing talk of entities as 'propertied' is exactly the kind of conception that led us on a wild goose chase in the first place. Once we give up this model for understanding objects and their properties, demand (d) seems to be no genuine demand upon a metaphysical framework. It is only upon having accepted a particular conception of metaphysics according to which we need to account for how objects come to instantiate properties—as if at some point they had none—that (d) will seem like an appropriate demand.

As opposed to (d), demand (c) regarding dispositions need not be particularly problematic for anyone intending to provide a non-realist re-construal of how to characterize the difference between something being soluble and yet remaining undissolved. What we need to give an appropriate account of is a modal framework that allows us to assert that an object *would* dissolve given appropriate conditions. Once again, Lowe formulates his problem in terms of a dispositional property as though some specifically philosophical ontology will be the solution. Modalist options permit one to circumvent the very formulation of the problem. If it is correct to say that there is a (dispositional) property possessed by something, it is because of some irreducibly modal characteristics about the object statable in a rather ordinary modal object language that constitutes an answer (Bueno and Shalkowski [2015]).

Finally, Lowe invites opponents to his view to account for (a) and (b). To provide an answer to this demand is, in one sense, straightforward as any answer would do, but Lowe has in mind the challenge that any account of laws must provide a persuasive view of what makes laws Laws. On Lowe's view, an Armstrongian nomic necessitation view is unnecessarily abstract, and we can get by with his own less 'abstract' view. It has been widely granted that some accounting of the difference between laws and mere regularities is important. Although Lowe quite naturally and correctly sees this as a problem arising from common ways both philosophers and scientists think about science as a domain of law, Lowe's own proposal are unlikely to be recognizable to practitioners of science as a proper solution to the problem.

Lowe wants to do without second-order necessitation relations as the metaphysical foundation for laws. Armstrong's second-order necessitation relation was to account for laws in a way that regularities could not. *All Fs are Gs* was alleged to be insufficient to account for the modal force of laws, leaving them as nothing more than "cosmic coincidences or accidents" (Lowe [2006], p. 27). Counterfactual conditionals, for instance, could not be true as a matter of universal generalizations. Facts about how things (actually) *are* have, themselves, no import at all for how things *could be* or how they *must be*, had other things been different. Against the background of this alleged failing of facts, however universal they might be, Lowe's account is no real advance at all. To account for the law that planets move in elliptical orbits he says that "the law consists in the fact that the property of moving in an elliptical orbit characterizes the kind *planet*" (Lowe [2006], p. 16).

Note the construction of Lowe's preferred formulation. A property *characterizes* a kind. Without resisting the theoretical background of properties and kinds as metaphysically significant and robust ontological groupings, there are no greater resources for resolving the original problem. We traded in the apparently actual but non-modal fact that *All Fs are Gs* for a property characterizing a kind, but that is merely an actual fact about how the kind *is* characterized. On the face of neither backgrounds for counterfactual conditions is there modal import. The first is a universal generalization regarding how individuals characterized one way are also characterized yet another way. The second is specific claim about how a different entity—a kind—is characterized. 'Is', not 'must be'. As such, if the universal fact about *Fs* is insufficient for how a particular *F* would be were things different, then the fact that a given kind (planet) is characterized by a property (moving in an elliptical orbit) is similarly insufficient.

Keeping with the philosophically dominant position, Lowe requires an account of laws that renders them contingent. Thus, he must thread a needle that may have no eye. Were the property of

moving in an elliptical orbit essential to the kind planet, then it most certainly would follow that it was no accident that planets move in elliptical orbits. This, however, cannot be the way to account for laws which are themselves contingent. The attribute that characterizes the relevant kind cannot be of its essence, but must be of the kind only contingently. It cannot be (part of) what it is to be that kind or a member of that kind. The attribute must be some contingent “addition” to the kind, for the law to be contingent. If characterizing a kind, but not being of the essence of the kind, is to explain when universal generalizations are not cosmic coincidences, then there must be both a way for the characterization to be contingent and yet have modal force. However, nothing that Lowe says about properties characterizing kinds even appears to give a claim about the orbits of planets the appropriate modal force, but too much modal force. Because the metaphysical strategy has no resources to make this vital distinction for all who hope to account for laws of nature, it fails by its own standard of success.

4. The No-Category Ontology: A Deflationary Alternative

In contrast with Lowe, we fail to see the force of positing ontological categories. All the work Lowe intends to obtain with these categories can be achieved by introducing concepts. We do need to categorize, not only to do metaphysics, but as part of the investigation of the world. However, nothing in either practice demands reification of the conceptual apparatus involved in the process.

To have a concept is to be able to distinguish (albeit not always sharply) objects that fall and objects that don't fall under the concept. Concepts can be given a more realist reading, in the sense that those things that fall under them are taken to exist, and concepts themselves can be taken as abstract objects. But one can just as easily adopt a nominalist understanding of concepts, in which they are simply devices to categorize objects, leaving entirely open whether the relevant objects and concepts themselves exist. The resulting picture is one in which no ontological categories are invoked, since no reifying of categories is relied on. Concepts and the categorization they allow for are enough to get the job done.

An important feature of this process is the dynamic nature of concepts: they can be refined, adjusted and they change over time. This malleability is an important trait that allows for concepts to be effectively used in explanatory contexts. Consider how the concept of *mass* has changed from a magnitude that does not depend on speed (in Newtonian physics) to one that does (in relativity theory). Or consider how the concept of *set* has similarly changed as various non-equivalent set theories characterized it differently. Or consider how the concept of *knowledge* has become progressively more sophisticated as epistemologists tried to make sense of Gettier's cases. Ontological categories, in contrast, are too rigid as devices of explanation, particularly if the goal is to provide a proper account of the foundations of science. As the scientific understanding of the world significantly shifts over time, categories—or, better, concepts—that were once thought to be suitable to account for a range of phenomena may no longer be. A more flexible and less ontologically rigid formulation of the conceptual background invoked in the sciences would be better suited to make sense of ever-changing scientific foundations.

Consider, for instance, the concept of *object*. As noted above, the use of objects—as a category of fundamental entities—has been challenged at the most fundamental level by structural realists, who question the adequacy of an object ontology for a proper understanding of the foundations of quantum mechanics (see Ladyman and Ross [2007], and French [2014]). Not surprisingly, in many instances, one needs to be prepared to make significant revisions in the conceptual framework to accommodate fundamental science, and rigid ontological categories just are not adequate for that task. Presumably, according to the metaphysician, ontological categories that characterize the world do not change, although the concepts that are used to describe reality do. In this respect, concepts are better suited than ontological categories to accommodate the dynamics of scientific research

and the foundations of the sciences. This point applies to each of the four ontological categories Lowe favors.

Universals, whether substantial (kinds) or non-substantial (properties and relations understood as universals), need not be thought of as ontological categories. To identify an object *as* a planet, and to infer that its orbit behaves in a certain way does not require, in addition to the object (the planet in question) any additional, independently existing category. Note, however, that categorization is achieved by invoking a suitable concept of *planet*, and realizing that planets, being spatiotemporal objects, are subject to various empirical regularities.

Non-substantial universals (properties and relations understood as universals) also need not be understood as an ontological category. Rather they can be formulated in terms of concepts, as certain ways of categorizing objects, but without the additional commitment to independently existing universals.

Finally, similar considerations apply to non-substantial particulars (property- and relation-instances). Rather than being thought of as an ontological category, these particulars are better formulated as concepts, as ways of conceptualizing certain things *via* their property- and relation-instances. Given blue things, there's no need to posit an independently existing property of *being blue* to account for what these things have in common. They just are blue; no reification is required, or warranted, for it—concepts are enough.

Since Lowe suggested that the mark of the supposed indispensability of his account is tied to its relevance to successful science, we should note how our concept-based account does relative to Lowe's when it comes to the sciences. From the point of view of individual scientists, it is not at all clear that there would be any loss were we to give up the category ontology. The kind of explanatory loss that Lowe envisions any non-category account will suffer (inferred on the basis of his suggestion that his own account is the most satisfactory) is certainly not a loss that will be experienced at the level of practicing scientists. Here the categories do no explanatory work on their own, and in that sense, this is not where they earn their ontological keep.

Where they do earn their keep then must be in explanatory projects external to the practice of science or in other aspects of what we may call 'the overall scientific enterprise'. But we are inclined to believe that we are only likely to find a source of evidence for this in the former (if anywhere). As we have already suggested, the kind of explanatory work that Lowe's account provides may be in part work required by self-generated why or how questions, that is, questions of a sort 'how do properties come together' to form objects. Once we drop the kinds of assumptions that generate these types of questions, the explanatory advantages of the position fall out.

One may worry that Lowe's account provides the kind of machinery required for further philosophical theorizing, perhaps in debates over realist and non-realist portrayals of science. Maybe the adoption of a category-based ontology is simply indispensable for being a scientific realist. However, some scientific realist positions do not require a category-based ontology (consider, for instance, the various structuralist positions articulated in French [2014], Ladyman and Ross [2007], and Worrall [1989]). In the end, the shift from categories to concepts seems to pose no loss regarding our capacity to make sense of the foundations of the sciences.

5. Conclusion

After raising difficulties to the very idea of an ontological category, we argued that Lowe's four-category ontology fails to deliver the expected explanatory benefits. Rather than embracing ontological categories, we suggest that the adoption of concepts, understood in a deflationary, ontologically innocuous way, can deliver the results without inflating the ontology. A promising alternative then emerges.

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