Are Properties Abstract Entities?

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1 Introduction

When introducing the metaphysics of properties—usually in class, but sometimes on airplanes—we often find ourselves in the awkward position of having to explain what kinds of things properties are in the broadest possible sense. Faced with this challenge, a first strategy is to enumerate examples: redness, humanity, fragility. A second strategy is to describe their theoretical role: they are the ways things are or could be, but not the things that have them. Understandably enough, some remain quite confused even at this point. It is tempting, then, to launch into a third, more ambitious strategy, which begins by sketching a picture of reality according to which there are, on the one hand, elbows and alligators and, on the other hand, numbers and possibilities. The former are concrete entities. They can be created or destroyed. They have more or less specific locations. They can be known through perception. In contrast, the latter are abstract entities. They aren't created or destroyed (though our words for and thoughts about them are). They aren't located anywhere (or at least not in any familiar way). They can be known, but such knowledge is secured only through peculiar means like mathematical intuition or rational reflection. Our introduction to the metaphysics of properties now continues: properties are like numbers and possibilities, not elbows and alligators. They are abstract entities, not concrete things. So, just as mathematical inquiry into numbers is a distinctive enterprise that requires mathematical expertise, metaphysical inquiry into properties is similarly complicated and, among other things, it requires a clear understanding of this distinction between abstract and concrete entities (on this picture and competing views of the abstract-concrete distinction, see Burgess and Rosen 1997 and Szabo 2003).

As we'll see shortly, every part of this third strategy is the subject of metaphysical controversy. Even so, the view sketched above enjoys a plausible claim to being the standard one and regularly serves as the backdrop against which dissenting views are characterized. By way of preview, there are some who deny that there is a significant distinction between the abstract and the concrete. There is also widespread disagreement about the features that are distinctive to abstract entities—e.g., about whether they have locations or causal powers. And, finally, there are many philosophers who deny that properties are abstract entities and instead claim that they are no less concrete than your coffee mug. This chapter explores some of these disagreements in order to understand how the abstract-concrete distinction bears upon the metaphysics of properties and *vice versa.*

Before proceeding, let me mark two assumptions that narrow our field of inquiry. First, I assume that the general commitments of views on which properties are universals, tropes, or sets are well understood, and, given length constraints, I focus mostly on the interaction of these three views with the abstract-concrete distinction. I therefore assume the mind-independent existence of properties which is a shared commitment of these views. I will, however, briefly consider the interaction of the abstract-concrete distinction with views that deny the existence of properties in the final section.

Second, I assume the separability of the abstract-concrete distinction from the nearby distinction between particulars and universals. Universals are standardly taken to be *general* entities that are in some sense shareable. In contrast, individuals like Napoleon are standardly held to be *particular* entities. If one adopts an ontology solely of universals and ordinary individuals *and* holds universals to be abstract entities, our two distinctions would coincide. Notice, however, that if one posits the existence of numbers in addition to ordinary individuals, these distinctions crosscut reality: some particulars like the number seven are abstract but others like Napoleon are concrete.

Further complexity results from the fact that trope theories are regularly described as holding properties to be abstract particulars rather than universals. The complicated relationship between these two distinctions is therefore a product of both *ontological* disagreement—namely, disagreement about what exists—and *categoreal* disagreement—namely, disagreement about what ontological categories entities fall within.

In debates about the metaphysics of properties, the particular-universal distinction arguably occupies pride of place over the abstract-concrete distinction. It has a more extensive historical pedigree and plays a key role in understanding the differences between contemporary views of tropes and universals. A careful account of how it informs the current debate over properties is provided in Chapter XX, this volume.

2 The abstract-concrete distinction

The abstract-concrete distinction is often held to partition reality as follows. It is both an *exhaustive* distinction, requiring that each entity is abstract or concrete, and an *exclusive* one, permitting no entities to be both abstract and concrete. The abstractness or concreteness of an entity is an *absolute* matter: entities are not merely abstract (or concrete) relative to something else; they instantiate a monadic property of *being abstract* (or *being concrete*). Moreover, this status is *invariant*: entities are not abstract at some world or time and concrete at others. They have their status essentially and permanently. Finally, abstractness and concreteness do not admit of degree, so entities cannot be more or less abstract even if some entities might be more or less controversial candidates for being abstract (on these and related features of the abstract-concrete distinction, see Cowling 2017).

Suppose that the abstract-concrete distinction partitions reality in the way just described. What determines which entities fall on either side of the metaphysical line? One way to answer this question is to provide an analysis of what it is for an entity to

be abstract.[1] A reductive analysis of the abstract-concrete distinction would offer informative and non-trivial necessary and sufficient conditions for being abstract. Such analyses can be formulated using the following schema: necessarily, *x* is an abstract entity if and only if _____. A plausible analysis of abstractness would be valuable for several reasons, but most immediately it promises a recipe for sorting reality into the separate domains of the abstract and the concrete.

In order to clarify his notorious doctrine of modal realism, David Lewis (1986: 81-86) examines a handful of ways in which philosophers purport to distinguish the abstract and the concrete. Several of these "ways" can be developed into reductive analyses of the distinction. For present purposes, we will focus on three of them and their consequences for the question of whether properties are abstract entities.

According to what we can call the *Way of Location,* necessarily, *x* is an abstract entity if and only if *x* lacks spatiotemporal location.[2] If our concern is solely with numbers and their status as paradigmatic abstract entities, the Way of Location seems a promising way to define abstractness. It would be bizarre to ascribe the number seven a specific spatial location and, while the relationship of numbers to time is a vexed matter, it is plausible to hold such entities to be "outside" of time rather than, say, existing at all times.[3]

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[1] Alternatively, one could analyze concreteness and then analyze abstractness. If the distinction is assumed to be exclusive and exhaustive, these strategies can be treated as largely interchangeable.

[2] This is one of several ways to refine what Lewis (1986) calls "the Way of Negation" which distinguishes abstract entities by what they lack relative to concrete ones. What I call "the Way of Causation" is a competing version of Lewis' Way of Negation.

[3] I set aside complications about the distinction between spatiotemporal location versus spatial location and temporal location for present purposes. See Hoffman and Rosenkrantz (2003).

Depending on which ontology one adopts, the Way of Location delivers quite different verdicts on the abstractness of properties. If properties are held to be transcendent or Platonic universals, they are abstract in virtue of existing outside of space and. On views that take universals to be immanent or Aristotelian entities—located wherever they are instantiated—they turn out to be concrete entities (on universal theories, see Armstrong 1978). The same holds true for tropes which are usually held to be located where their bearers are (on trope theories, see Campbell 1990 and Ehring 2011). Additionally, if properties are identified with sets of entities and impure sets—roughly, sets with concrete individuals as members—are located where their members are, the Way of Location entails that properties are concrete rather than abstract (on set-theoretic views of properties, see Lewis 1983 and Armstrong 1978).

The Way of Location ties the abstract-concrete distinction to the weighty matter of whether something is found within spacetime, but it is far from clear that lack of spatiotemporal location is a genuine mark of abstractness. Consider, for example, the prospect of physical theories according to which there is a fundamental level of reality more basic in our physical explanations than spacetime. In such a scenario, there is little temptation to think the relevant posits would be properly categorized alongside numbers as abstract solely because they are non-spatiotemporal.

Ultimately, facts about spatiotemporal location seem inadequate for characterizing the abstract-concrete distinction. The same goes for modal facts about necessary or contingent existence. Although natural numbers are paradigmatic abstract entities and are regularly held to be necessary existents, mere necessary existence seems to be neither a necessary nor sufficient condition for abstractness. A necessarily existing Abrahamic God is a distinctive kind of concrete posit, and, if transcendent universals existed only contingently, this seems irrelevant to their standing as abstract entities (see Adams 1981). Although more complex modal-spatiotemporal properties like *being essentially non-spatiotemporal* might better comport with intuitions about abstractness

and concreteness, it will be useful to turn now to approaches that draw upon different core notions—most notably, causal structure.

According to the *Way of Causation*, necessarily, *x* is an abstract entity if and only if *x* is non-causal—i.e., *x* does not or cannot stand in ordinary causal relations to individuals. Roughly speaking, the Way of Causation takes abstract entities to be outside of the causal structure of creation, destruction, and change that pervades concrete reality. Like the Way of Location, this analysis takes a feature plausibly ascribed to numbers—*being non-causal*—as the mark of abstractness.[4] It is, however, unclear whether causal inactivity is a plausible sufficient condition for being abstract. Consider the case of what Peter Forrest (1982) calls an "epiphenomenalon"—a physical yet causally inert particle. Since such an entity seems conceivable but not intuitively abstract in nature, it is unclear that causation is the right tool for marking the abstract-concrete divide.

When we turn to the verdicts the Way of Causation delivers about properties, it proves difficult to extract a clear answer. This is partly because, on many views, properties occupy a crucial role in providing explanations of causal phenomena. The blackness of the surface is what causes it to retain heat. The mass of the particle is what causes it to decelerate. To deny that properties are potential, though perhaps only partial, causes of events would be to significantly undermine a standard way to defend their existence and theoretical importance. But, if we revise the Way of Causation by stipulating that properties are not causal in the sense relevant for being concrete, it is unclear how this would differ from simply insisting that properties are abstract and objects are not. It is more plausible for defenders of tropes and universals to reject the Way of Causation altogether. Views on which properties are sets are in a similar

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[4] The causal isolation of mathematical entities is an abiding theme in contemporary philosophy of mathematics due in part to Benacerraf (1973). For discussion, see Leng (2010).

position. For, while it is tempting to assume that sets are non-causal in virtue of being mathematical entities like numbers, some sets enter into what are arguably causal relationships: impure sets come into being only when their concrete members do and, upon the destruction of their members, presumably cease to exist. Given such cases, any verdict the Way of Causation might offer on properties will be a tendentious one.

The preceding reductive analyses focus on features that abstract entities allegedly lack like locations and causal powers. In contrast, what Lewis (1986: 85) calls the *Way of Abstraction* holds abstract entities to be those things that "result from somehow lacking specificity, so that an incomplete description of the original concrete entity would be a complete description of the abstraction." Given this rough but intuitive characterization, abstractions do sound rather like properties. We can talk, for example, about the property of mass being only an "abstraction" from massive things. But, while some abstractions seem suitable for identification with tropes or universals, Lewis (ibid.) argues that the Way of Abstraction cannot be used to demarcate properties in general:

> But we cannot just identify abstractions with universals or tropes. For why
> can we not abstract some highly extrinsic aspect of something - say, the
> surname it bears? Or its spatiotemporal location? Or its role in some
> causal network? Or its role in some body of theory? All these are
> unsuitable candidates for genuine universals or tropes, being no part of
> the intrinsic nature of the thing whence they are abstracted.

Lewis's argument here assumes that tropes and universals are relatively sparse: only certain predicates—namely, those concerning the intrinsic and relatively natural features of objects—express properties. In contrast, abundant views—roughly, views that hold all (non-paradox inducing) predicates express properties—reject this

assumption by positing a trope or universal for each of the highly extrinsic features Lewis mentions (see Ch. XX, this volume). But, while such abundant views are theoretical options, it remains difficult to reconcile abundantism with the assumptions about location and constituency that trope and Aristotelian universal views standardly adopt. Although *redness* and *mass* might be envisioned as constituents of red things and particulars, it is not clear how to account for the location or constituency of properties such as *being to the left of a thing with the same last name.*

The Way of Abstraction faces additional extensional challenges (e.g., regarding propositions and natural numbers), but it does prove useful for marking the historical connection between abstract entities and the cognitive process of abstraction which is often thought to underwrite our epistemic access to properties (see also Fisher 2020 on the relationship between abstraction and trope theory). And, as noted in Section One, some philosophers have argued that we enjoy a distinctive kind of epistemic rapport with mathematical entities that is radically unlike our ways of knowing concrete entities. Despite the regularity with which abstract entities have been claimed to have a unique epistemological status, there is no viable strategy for marking the abstract-concrete distinction in purely epistemic terms, especially since many views assert that we are perceptually aware of properties.

Independent of concerns about properties, all of the preceding approaches for reductively analyzing the abstract-concrete distinction face challenges. Taken together, they deliver conflicting verdicts about the abstractness or concreteness of properties, depending upon both how the analyses are implemented and, of course, what one takes properties to be. Perhaps the strongest conclusion that can be drawn is that, if one takes properties to be non-causal transcendent entities, their affinity with mathematical entities make them likely to be counted as abstract.

For some philosophers, the ambiguity of talk about abstract and concrete entities, coupled with its limited theoretical usefulness, suggests that we are best served to

dispense with it as a piece of metaphysical theory. In slogan form, the case for this kind of eliminativism about the distinction might be put as follows: if we are not sure which things are abstract, why they are abstract, or why it would matter, then we should stop talking about abstractness and concreteness altogether. I return to the prospects for eliminativism in the final section.

3 Must properties be abstract entities?

Our understanding of the abstract-concrete distinction is not an all or nothing affair nor is it wholly dependent upon the availability of a reductive analysis. As with other kinds of entities, we can learn much that is useful by discovering certain necessary or sufficient conditions for being an abstract entity. On primitivist views, the distinction is an ineliminable piece of theory, but one that cannot be reductively explained. And, for would-be primitivists, a crucial question is whether *being a property* is a sufficient condition for *being an abstract entity*.

As we saw above, analyses of the distinction offer competing verdicts about the abstractness of properties. In some cases, the proposed analyses seem to misclassify entities. For instance, if the Way of Location deems impure sets concrete in virtue of being located, we are better served to simply reject the Way of Location (or deny that impure sets are located). In other cases, especially ones regarding tropes and universals, matters are much less clear. This is likely due to the peculiar theoretical grasp we have of tropes and universals. Our grounds for positing them and, in turn, our understanding of them, flows almost exclusively from the metaphysics of properties. In this respect, tropes and universals are importantly different from sets, which we know best via our mathematical theories. Given this difference, one might conclude that the relationship of tropes and universals to the abstract-concrete distinction is a negotiable matter: we can assign them whatever status best serves our metaphysical purposes. In stark contrast, however, many philosophers posit an affinity between properties,

propositions, and mathematical entities and take their abstractness to be self-evident. On such views the abstractness of properties is far from negotiable. It is instead held to be a conceptual necessity that *being a property* turns out to be a sufficient condition for *being an abstract entity*.

But why think that properties, regardless of their ontological category, are abstract entities? I take it that the best available argument runs roughly as follows. The essential theoretical role of properties revolves around their conferral of qualities upon individuals—in short, properties explain why things have the qualities that they do. Crucially, this distinctive species of *metaphysical* explanation is radically unlike the explanations which concrete entities can enter into. If properties were concrete entities, they would be incapable of accounting for the conferral of qualities. Perhaps they figure into *some* metaphysical explanations, but the conferral of qualities simply isn't the kind of thing that concrete reality can explain. So, unless properties occupy a radically different ontological category—namely, that of *abstract entity*—they cannot accomplish the essential explanatory work required of them.

The preceding argument assumes a view of properties and their explanatory value that can be resisted in several ways, but, for our purposes, the key question is whether it is the abstractness of properties that makes them suitable for occupying this theoretical role. One way to show that abstractness is not required for properties to serve as the conferrers of qualities is to show that there are credible views that identify properties with concrete entities. Importantly, this cannot be accomplished by simply insisting that one could categorize tropes or universals as concrete, since the plausibility of doing so is precisely what is at issue. We must instead draw from ontological categories that are *not* introduced or grasped solely via the metaphysics of properties.

One view of properties that might serve this role is *mereological nominalism*, according to which properties are concrete objects or the mereological sums thereof. Roughly put, such a view takes humanity to be identical with the mereological sum of

all humans (on mereological nominalism, see Effingham 2020). While such a view warrants broader consideration, it is poorly suited as a tool for rebutting the argument set out above. The explanatory role of the properties in question is their status as the *explanans* of the qualities of concrete objects, so positing yet more concrete objects and pointing toward their qualities seems to send us into an explanatory circle.

An alternative metaphysics of properties that is better suited to rebutting the above argument is *locationism*, according to which properties are identical with regions or locations. On such a view, properties are to be distinguished from the category of *concrete objects* and from the category of *abstract entities.* They are, instead, *concrete locations* (on locationism, see Cowling 2014). Where more familiar species of property realism posits distinctive relations like instantiation, compresence, or exemplification, locationism holds that the relation between objects and properties is of the same ideological kind as the occupation relation that objects bear to regions of spacetime. Just as objects are extended in virtue of occupying certain regions of spatiotemporal locations, objects are massive in virtue of occupying certain locations in quality-space. The resulting framework aims to unify the metaphysics of properties with the metaphysics of location and dispense with separate primitive notions. For instance, the phenomenon of intrinsic qualitative change is to be understood in terms of objects moving through quality-space in analogy with how changes in the position of objects can be understood in terms of their pattern of spatiotemporal location (on the role of locationism in interpreting physical theory, see Arntzenius and Dorr 2012).

The case for locationism draws partly on theoretical conservatism: we have an independent grasp on and case for positing the existence of locations, so accounting for property-theoretic phenomena like change and similarity via locations is preferable to admitting *sui generis* entities like tropes or universals. Moreover, since locations are immanent, contingent, known through perception, and play causal roles in our best physical theories (e.g., the curvature of spacetime explaining facts about acceleration),

there is adequate reason to believe they are concrete. There is therefore no barrier to holding that concrete locations can provide the metaphysical explanations distinctive to properties—namely, conferring qualities upon objects.

Those committed to the view that *being a property* is a sufficient condition for *being abstract* might object that locations are, contrary to what one might expect, abstract entities. And, while one finds remarks in Rudolf Carnap (1951) suggestive of the view that spacetime points are abstract entities, the causal, immanent, and contingent character of spatiotemporal explanations in our best physical theories is reason to believe that, if spatiotemporal locations exist, they are concrete in nature. A more fine-grained objection is that, unlike spatiotemporal locations, the locations that confer qualities upon objects—namely, regions of quality-space—are abstract entities even if spatiotemporal locations are concrete.

Against this objection, notice that locationism is premised upon the thesis that *location* is an ontological category that subsumes species like *spatiotemporal location* as well as *spatial location* and *temporal location*. But all locations—quality-space included—have the capacity to supply certain kinds of causal explanations. In particular, the kinds of explanations that invoke quality-space concern qualities like *mass* and *colour* rather than, say, shape and size. Since there is no non-question begging reason to insist upon the abstractness of quality-space, locationism serves as a useful counterexample to the view that properties are by definition abstract entities. Whether or not we find locationism ultimately appealing, we should nevertheless deny that *being a property* is a sufficient condition for *being abstract.*

4 Uses and abuses of the abstract-concrete distinction

Let's conclude with what the abstract-concrete distinction *cannot* do for us. Consider the following argument one sometimes encounters: Abstract entities are, by their very nature, entities of kind *K* (e.g., non-spatiotemporal, necessarily existing) and properties

are abstract entities, so properties are, by their very nature, entities of kind *K*.
Arguments of this form should leave most of us unconvinced, given the substantial
challenges each premise faces. As a result, there is little reason to believe that we can
credibly rely upon the abstract-concrete distinction to settle debates about whether
properties are located, non-causal, necessarily existing, or what have you.

We should also be wary of nominalist arguments that invoke abstractness in
order to make a case against the existence of properties. A plausible argument against
properties ought to establish a claim regarding the specific nature of properties (e.g.,
that they lack spatiotemporal location) and then show that entities of such nature are
problematic (e.g., because of epistemic worries about non-spatiotemporal entities).
Appeals to the abstract-concrete distinction are not a replacement for either of these
steps especially given our tentative grip on the distinction and where properties fall
relative to it. In general, arguments against the existence of properties are usually more
tendentious and therefore less convincing to the extent that they rely upon general
claims regarding abstract-concrete distinction.

Upon closer scrutiny, the limited value of the abstract-concrete distinction for
deriving insights about properties should be unsurprising. Notice that the kind of
phenomena properties are often held to explain (e.g., resemblance, laws, causation)
seem conceptually prior to the abstract-concrete distinction. These phenomena generate
more urgent philosophical concerns than the project of sorting through our hazy sense
of what abstract entities are *really* like. Our best theories about properties should not be
hostage to our hunches about abstractness. We should also be suspicious of efforts to
ward off concerns about properties by simply announcing that they are concrete rather
than abstract. If we cannot determine the nature of properties on the basis of their
claimed abstractness, we cannot sanitize them against metaphysical or epistemological
objections simply by claiming they are concrete.

As we have seen, there is a lot that the abstract-concrete distinction *cannot* do. Indeed, the fact that it affords us so little assistance seems to be a point in favor of eschewing the distinction entirely. At such points, the assessment offered by Theodore Sider (2013: 287) seems apt:

> The abstract/concrete distinction behind this objection is a relic of a certain theory. According to this theory, reality divides into two realms—abstract and concrete—in a way that is significant on various fronts. Epistemic: we know about the abstract a priori. Modal: facts about the abstract are necessary. Causal: the abstract is causally inert. Spatial: abstract entities are not in space and time. But this is just a theory, nothing more. It's not sacrosanct; nothing supports it other than tradition; and it should stand aside if it obstructs an attractive simplification of ideology.

There are, however, two reasons to think that we cannot yet dispense with the abstract-concrete distinction.

First, as noted earlier, the lack of unanimity about abstractness and concreteness does not mean that, within a *specific* metaphysical theory, it cannot be put to productive albeit theoretically partisan use. It is, for example, open to a realist about properties or numbers to hold that abstract entities have distinctive metaphysical features in virtue of their abstractness or, more boldly, to claim that such entities are graspable via rational intuition precisely because of their abstractness. Clearly, this would be a controversial and highly partisan stance toward abstractness, but if the resulting theory proved powerful and otherwise attractive, it might emerge as the most reasonable way to conceive of the distinction. Like many other theoretical "relics", it is the explanatory value of abstractness *within a specific metaphysical theory* rather than its non-negotiable place in our scientific or folk theories that proves significant. While the abstract-concrete

distinction may be of little interest when we aspire to neutrality between competing theories, it is potentially a valuable tool when put to work in a fully articulated metaphysics of properties.

Second, the question of whether we should retain, or jettison certain distinctions and concepts is often answered by looking solely at their place in our fully articulated theories. On such an approach, if a property does not occur in our canonical, formal expression of our theory, then, other things being equal, we can simply disregard its significance and avoid invoking it. But, obviously, we present our theories in classrooms, on airplanes, and at conferences in a host of informal and often quite peculiar ways—e.g., by using the propaedeutic with which this chapter began. In some cases, the extent to which theories can be grasped at all might depend upon the heuristic use of concepts that ultimately fall away in our final formulations. While our ideological commitments, narrowly understood, do not extend to whatever we talk about when we present novel theories to the uninitiated, it would be a mistake to focus our metaphysical attention solely upon formalized theories.

When we turn our attention to heuristic, informal roles of this kind, the abstract-concrete distinction turns out to be quite powerful. For all its imprecision, it does allow us to sort potential ontological commitments into categories that are unified by similar philosophical concerns. Similarly, it permits us to sift through metaphysical theories that exhibit substantial agreement with each other on account of whether they posit similar entities. So, while it is a highly imperfect tool for taxonomy, it is nevertheless an expedient way to set our philosophical agenda when it comes to investigating different kinds of entities and evaluating different sorts of theories. For instance, to identify a metaphysics of properties as platonist is, in part, to indicate that its distinctive posits have more in common with paradigmatic abstracta like natural numbers than ordinary individuals. This in turn conveys that its theoretical challenges and its vices and virtues have an affinity with certain "platonist" views in the philosophy of mathematics.

In these admittedly vague ways, the abstract-concrete distinction exerts influence over metaphysical practice as an informal, agenda-setting apparatus. Depending on how one views the broader trajectory of the metaphysics of properties, this influence might be seen as vicious or virtuous. Importantly, however, its competitor is not the outright elimination of heuristic uses of concepts and distinctions; the practice of metaphysics can hardly do without them. Its natural rival is, instead, some altogether different suite of undefined concepts and murky distinctions that are almost certainly subject to comparable controversy.[5]

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