On What There Is (In Space)

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Abstract
Dispositions depend on "categorical" facts definitionally and pedagogically. Must they always depend on them also *ontologically* for "grounding"? Does there really have to be an *ultimate* "bottom level" of matter, and must *it* be "categorical"? The concepts microphysics supplies, however, are dispositional in meaning. What predicates aren't? Besides "shaping" and "locating" predicates, predicates expressing degrees of similarity and dissimilarity are nondispositional enough in meaning: but the predication of all these features of things depends upon other features for these to bound and to relate to one another comparatively. Faced with the uncomfortable alternative of "dispositions all the way down" Simon Blackburn proposes antirealism. Possibly, though, predicates' dispositionality or categoricality can be relative to a given level of the organization of matter.

Leibniz argued that there had to be (so to speak) metaphysical atoms, because, if there were only composites, there wouldn't be anything out of which they could be composed (*Monadology, 2*). The idea, presumably, was that "all a composite really is" is its components, so that to count both a composite and its components as *equally* real would be illicit double-counting somehow.

I say "somehow" because I see no reason why this should be so. The left-hand side of the Second Antinomy in Kant's *Critique of Pure Reason* (A434 = B462–A436 = B464) incorporates something of a variation on this. Since composition is inessential to matter, the argument goes, it can be imagined away, which would be impossible if there were no incomposite material bodies. (The rebuttal that comes to mind is that, while composition is indeed inessential to a material thing's components, it isn't at all inessential to the thing which they compose.)

A parallel line of thought seemingly inspires the Cosmological Argument of natural theology: there must exist a self-explanatory being, or at least a being-in-no-need-of-explanation, because something which is explained *only* by an explainer or explainers in need of explanation in turn is, after all, really something unexplained. However questionable such a maxim is when understood ontologically, it is surely unproblematic if understood pedagogically: teachings which a learner does not comprehend will have to leave that learner untaught. Then again, there are those who argue that there

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really must be *ultimate* laws of nature, for otherwise there won't be really any natural order in the world. Does a phenomenon's subsumption under a mere constant conjunction - of whatever *de facto* universality - suffice to disprove the phenomenon's "contingency"?

At any rate, a phenomenon's *causal* explanation is arguably left incomplete - synchronically - by its mere subsumption under a constant conjunction that is itself uncaused.

Any thing's possession of a *disposition* will be an example of a causal or quasi-causal regularity - to the effect, for instance, that any time that thing were to come under conditions C, result R would (or would be apt to) ensue. This is a subjunctive-conditional formulation. Facts so expressed are often found to supervene nomologically on other facts - their causal grounding. The existence of any disposition of a thing even when it is not being actualized is ontologically nothing, we say, over and above the internal facts about the thing which causally ground that disposition.[1] But must there *ultimately* be non-dispositional ("categorical") facts about the thing thanks to which it has the dispositions that it has? Simon Blackburn writes:

> When we think of categorical grounds, we are apt to think of a spatial configuration of things - hard, massy, shaped things resisting penetration and displacement by others of their kind. But the categorical credentials of any item in this list are poor. Resistance is *par excellence* dispositional; extension is only of use, as Leibniz insisted, if there is some other property whose instancing defines the boundaries; hardness goes with resistance, and mass is knowable only by its dynamical effects. Turn up the magnification and we find things like an electrical charge at a point, or rather varying over a region, but the magnitude of a field at a region is known only through its effect on other things in spatial relations to that region. A region with charge is very different from a region without: perhaps different

[1] That is what "we say", I wrote. But what about "scholastic realists" who see the causal grounding of a disposition as causing the disposition, and the disposition as then *independently* causing the actualization under triggering conditions? Indeed, any positing of a metaphysically ultimate law of nature amounts to crediting a posited disposition with not just an existence ontologically independent of its causal grounding, but an existence absolutely uncaused. However, that, in fact, is one of the alternatives facing scientific realism, I go on to argue.

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> enough to explain all we could ever know about nature. It differs precisely in its dispositions or powers. But science finds only dispositional properties, all the way down.[2]

Blackburn asks "whether we can live with a concept of objectivity that leaves us only powers without end" and points towards an "escape from the discomfort this causes" by turning away from realism (page 65). For realists, there would seem to be just three alternatives: (1) that "powers without end" is in fact an accurate characterization of physical reality; (2) that certain ontologically foundational dispositions exist -"miraculously" - without any causal grounding at all; and (3) that what underlie all the dispositions that exist in things are non-dispositional facts about them which are forever unknowable scientifically. Shades of Locke's "*substance we know not*" (*Essay*, Book II, chapter 23, section 29) and Kant's unknowable *Ding-an-sich*!

What light does it throw on the issue to point out two different ways for dispositional facts to depend upon other facts? On the one hand, there will be conditions C and result R, potentially recurring facts which constitute that disposition as the disposition it is. On the other hand, there are the facts (if any) which constitute that disposition's causal grounding. Without available facts of the first sort, it is *logically* impossible for any disposition to exist. And without knowing about these it is logically impossible to know anything about the disposition which involves them. Furthermore, though they *could* be dispositional things themselves, the knowledge of *them* must ultimately come down to knowledge about non-dispositional things that can occur in the world, for our minds' ability to grasp any complexity is only finite.

In this epistemic context, let us understand a "dispositional" concept, property or fact as one that it is impossible to grasp without a grasp of what is conceptually involved in subjunctive-conditionality (i.e., in what is conveyed by the word "if" as ordinarily used). Apart from such "dispositional" properties, what other relational or non-relational properties are there that a thing can have? Let us take *properties* here in the fine-grained sense in which two noun phrases expressly specifying properties designate the very

[2] Simon Blackburn, 'Filling in Space', *Analysis*, Volume 50, No. 2 (March 1990), 62–63.

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same *property* as each other only where the two expressions are logically equivalent.[3]

In the first place, then, properties of spatiotemporal location, shape, size and motion are not going to be dispositional. But it is impossible - and inconceivable - that a thing should have no properties over and above those, for even an absolute vacuum (were it ever to occur anywhere) would have to have those properties.

Secondly, there are properties of resemblance and nonresemblance - in general, degrees of similarity and dissimilarity. These properties are themselves nothing in their possessors over and above the subvening properties that they and what they are compared to possess *in virtue of which* those resemblances and nonresemblances among them exist. Nevertheless, it is possible to know of a resemblance or a lack of resemblance between two things without knowing just what the properties are in virtue of which that resemblance or nonresemblance exists. It is said that suitably trained "chicken sexers" can reliably sort new-hatched chicks at a glance into males and females without being able to identify by just what visual clues they can tell the difference.

Thirdly, then, there are properties like *being striped*, which involve combinations of non-dispositional properties of the first two kinds. *Being striped* is a property of surfaces, but spatial patterns of three-dimensional heterogeneity count equally as being non-dispositional.

Lastly, there is a kind of property concept to consider that is "dispositional" by our definition but that identifies what it designates, specifically, as that which constitutes the causal grounding of a particular disposition or dispositions. The *gene* concept, for instance, was invented to stand for whatever passed on hereditary traits from parents to offspring. And something similar applies, with different causes and effects, for the concept, say, of a *vitamin*.

At any rate, we can see how it is that, epistemically, there is going to be no question of any infinite regress. For knowledge of the existence of any dispositional fact it is necessary to have a conceptual grasp of potentially recurrent facts capable of triggering and actualizing the disposition; and, while those facts *may* be themselves dispositional, the knower must ultimately possess non-dispositional concepts in terms of which to understand whatever is known about any dispositions. And there are at hand some non-dispositional concepts capable of performing that function.

However, ontologically the case is different. Realists unable to contemplate dispositional properties all the way down are left with

[3] Cf. D. Goldstick, 'Property Identity and 'Intrinsic' Designation', *Philosophy*, Volume 72, No. 281 (July 1977), pp. 449–452.

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acknowledging either absolute unknowability, on the one hand, or absolute unexplainability, on the other. *Maybe* the absolute unknowability could be absolute unknowability for humans only. Perhaps it would not have to apply to knowledgeable angels. The unexplainability, though, *would* be absolutely absolute. There would be ultimate dispositional facts which *had no explanation*, not merely no explanation that could be ever ascertained. It is, to be sure, the nailing down of just such nomological brute facts that (so to speak) metaphysics has long posed as the ultimate goal for physics, and that the long history of physics teaches us to recognize as apter always to be historically relative and temporary only.

What are the prospects for a *relative* concept of "dispositionality" in this context? The causal grounding of any disposition could count as "categorical" *relatively* to the disposition it grounded, but *its* causal grounding would be "categorical" relatively to *it*, and so on. Such a conception would certainly leave unsatisfied the craving for nomological ultimates, as also any craving for in principle insuperable mysteries. And certainly there are those, too, who in the philosophical study, at least, persist unshakeably in preferring paradox to realism. But, ontologically, where is the necessity for all of the "categorical" to be categorical *absolutely*?

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