

How to Ground Powers

David Builes

Forthcoming in *Analysis*

Abstract

According to the grounding theory of powers, fundamental physical properties should be thought of as qualities that ground dispositions. Although this view has recently been defended by many different philosophers, there is no consensus for how the view should be developed within a broader metaphysics of properties. Recently, Tugby has argued that the view should be developed in the context of a Platonic theory of properties, where properties are abstract universals. I will argue that the view should not be developed within such a framework. Either the view should be developed with an ontology of Aristotelian properties, or it should be developed in a Nominalist framework that contains no properties at all.

1. Introduction

Metaphysicians disagree about how to account for nomological necessity. One popular approach is to account for nomological necessity by reference to the nature of fundamental physical properties. According to this approach, fundamental physical properties like *mass* and *charge* are “powerful”, in the sense that they necessitate corresponding dispositions to behave in various ways. However, there are different accounts for how this necessitation goes. According to one approach, to be massive *just is* to be disposed to behave in various ways. On this approach, fundamental properties are “pure powers”: the nature of a fundamental property is wholly exhausted by its dispositional nature.¹ Although this approach is fairly popular, it faces a number of influential objections.² In light of these objections, recently many philosophers have begun to defend other accounts of how fundamental properties manage to necessitate certain corresponding dispositions. According to an alternative approach, properties like mass have a non-dispositional, qualitative nature that *grounds* certain corresponding dispositions. This is the *grounding theory of*

¹ For defenses of this kind of view, see Chakravartty (2003, 2007), Mumford (2004), and Bird (2007).

² See, for example, Swinburne (1980), Psillos (2006), Barker (2009), Jaag (2014), and Coates (2022).

powers (GP), which has been defended in different guises by Jacobs (2011), Tugby (2012, 2021, 2022), Mørch (2018), Kimpton-Nye (2021), and Builes (2022b, 2023, forthcoming).³

In this paper, I will be concerned with how GP should be developed. In the most comprehensive, book-length development of GP, Tugby (2022) has argued that GP should be combined with a Platonic theory of properties, according to which properties are abstract “transcendent” universals. Tugby calls his particular Platonic development of GP *Modal Platonism*. If Tugby is right that the best version of GP is Modal Platonism, then this would have far-reaching implications. For example, any argument against Platonic universals, or abstract objects more generally, might indirectly become an argument against GP.⁴

My goal will be to argue that, contrary to Tugby, GP should *not* be developed in the context of a Platonic theory of properties. In particular, I will argue that the main examples that are used to motivate GP in the first place are undercut if GP is developed in a Platonic framework. Either GP should be developed in a Nominalist framework, according to which there are no properties at all, or it should be developed in an Aristotelian framework, where properties are concrete, localized tropes or universals.

2. Motivating Examples

Prima facie, it is hard to make sense of how a property with a non-dispositional nature could ground (and therefore necessitate) a corresponding dispositional property. In response to this worry, defenders of GP typically motivate their view by appealing to certain intuitive examples. For example, let *S* be a particular sphere. *S* has a particular geometrical property, *being spherical*, that has a non-dispositional nature (i.e. to be spherical is to have a surface composed of points that are all equidistant from a given point). *S* also has the dispositional property of *being disposed to roll*. However, there seems to be an intelligible connection between these two properties. It is natural to think that *S* is disposed to roll (at least partly) *in virtue* of the fact that it is spherical.⁵ If this is right, then this would be an intuitive example of GP at work.

To take another example, suppose you instantiate the phenomenal property of *being in pain*. That phenomenal property has a qualitative, non-dispositional nature (i.e. the nature of pain is given by its phenomenal character). Furthermore, if you are in pain, you probably also have the disposition to engage in certain avoidance behaviors to get rid of the pain. However, there seems to be an

³ For further discussion of the view, see Yates (2018) and Coates (2021). Coates (2021) includes a much more extensive discussion of the distinction between “qualities” and “powers”.

⁴ For a recent argument against the existence of a variety of abstract objects, see Builes (2022a).

⁵ This example is discussed in, for example, Heil (2003: 86) and Martin (2008: 44-45).

intelligible connection between these two properties. It is natural to think that the reason why you are disposed to engage in certain avoidance behaviors is *because* you are in (phenomenal) pain.⁶

In both of these cases, it is important that the non-dispositional property (e.g. sphericity, pain) that is responsible for grounding a corresponding dispositional property has a substantive, qualitative nature. For this reason, proponents of GP have argued that GP is not a viable view if fundamental physical properties are, following the terminology of Hildebrand (2016), “bare quiddities”.⁷ A bare quiddity is a non-dispositional property whose nature is wholly exhausted by facts about which other bare quiddities it is (non-)identical to. If fundamental properties were bare quiddities, it would be entirely mysterious how different bare quiddities could ground distinctive kinds of physical dispositions. In other words, proponents of GP agree that the robust *qualitative* nature of fundamental physical properties is required to explain how they manage to ground corresponding dispositions.

3. GP and Properties

GP can be developed in different frameworks concerning the metaphysics of properties. To start, let us consider a Nominalist development of GP, according to which there are no properties at all. To capture the sphere example, the Nominalist could say the following, where the relevant sense of “because” corresponds to grounding:

Nominalist GP (NGP): *S* is disposed to roll *because* *S* is spherical.⁸

Here, “is disposed to roll” and “is spherical” are merely predicates, so NGP does not carry any ontological commitment to properties. However, it should be noted that NGP is not only available to Nominalists. In principle, any theory of properties is compatible with NGP. It is just that NGP does not make any commitments regarding the metaphysics of properties, so it is Nominalist in the sense that it does not make any *use* of properties.

Now let’s consider a development of GP in the context of a Platonic theory of properties, where properties are understood as abstract universals. In the case of NGP, *S* is disposed to roll simply

⁶ For further defense of this view, see Mørch (2017, 2019).

⁷ For example, Tugby (2022) writes: “if universals were nothing more than bare quiddities, it would seem inexplicable as to why different properties ground different laws and dispositions” (8). Kimpton-Nye (2021) also writes: “In order to account for the different behaviours/dispositions associated with different properties, ... properties ought not be understood as ‘bare quiddities’ ... properties should be understood as ‘thick’ or ‘qualitative’ quiddities..., and the fact that different properties are associated with different dispositions is thus accounted for in terms of their different qualitative natures” (3427). See Smith (2016: 249) for a similar point, and Mørch (2018) explicitly focuses on how phenomenal properties are capable of grounding dispositions.

⁸ See Fine (2012) for an introduction to the notion of grounding.

because of what *S* is qualitatively like, but to get Platonic properties in the explanatory mix, Tugby (2022) argues that *S* is disposed to roll ultimately because of what the Platonic property of *Sphericity* is qualitatively like. In outline form, we might express this view as follows:

Platonic GP (PGP): *S* is disposed to roll *because* (i) *S* instantiates the Platonic property of *Sphericity* and (ii) the Platonic property of *Sphericity* is *Q*.

Here, “*Q*” is a placeholder that is meant to denote the relevant quality possessed by *Sphericity* that grounds the corresponding disposition. Tugby’s development of Modal Platonism adds some extra detail to PGP. According to Tugby, properties confer dispositions by being “directed” towards their manifestations, and he captures this kind of directedness by appealing to a second-order relation of “dispositional directedness” between universals. When a universal *U* confers a disposition to manifest *M*, there is a relation of dispositional directedness from *U* to *M*. So, on Tugby’s account of GP, “Platonic universals are purely *qualitative* properties which necessarily ground the relations of dispositional directedness in which they stand” (2022: 67). We could regiment this view as follows:

Modal Platonism: *S* is disposed to roll *because* (i) *S* instantiates the Platonic property of *Sphericity* and (iii) the Platonic property of *Sphericity* stands in the relation of dispositional directedness to the Platonic property of *Rolling*. Furthermore, (iii) holds *because* (ii) the Platonic property of *Sphericity* is *Q*.

4. The Problem

The problem for any version of PGP (including Modal Platonism) is that it is not at all clear what “*Q*” should be. The only obvious candidate is that “*Q*” should be “spherical”. In other words, the relevant quality possessed by *Sphericity* is that it is spherical. Unfortunately, this is clearly false. Not only is the Platonic property of *Sphericity* not spherical, it has *no geometrical properties at all*, because it is entirely non-spatial. Things can only have shapes if they are spatially extended, but no abstract object is spatially extended.

Note that this worry does not apply to NGP. For NGP, the relevant grounding relationship concerns a particular concrete sphere *S*. Contrary to the abstract property *Sphericity*, *S* really is genuinely spherical, and it is the fact that *S* is spherical that explains why *S* is disposed to roll.⁹ In sum, the

⁹ Different Nominalists have different accounts for what, if anything, further grounds predicative truths like “*S* is spherical”, and these different accounts will have interesting implications for NGP. For example, “Ostrich Nominalists” allow that some predicative facts are fundamental, while “Resemblance Nominalists” will say that predicative facts are grounded in resemblances to other objects (e.g. *S* is spherical because it resembles other spherical objects), and “Class Nominalists” will say that predicative facts are grounded in facts about class membership (e.g. *S* is spherical because it is a member of the class of spherical objects). Both Resemblance and Class Nominalism render

challenge with combining GP and Platonism is that, while we *do* know that concrete, localized objects can be spherical, it is not at all clear what the abstract Platonic property of *Sphericity* is supposed to be qualitatively like (given that it is not spherical).

Similar remarks apply to the example of pain and avoidance-dispositions. Consider the fact that a person who is in pain is disposed towards certain avoidance behaviors. We can easily understand why that person would want to engage in avoidance behaviors if *they* are in pain, but certainly the abstract Platonic property of *Painfulness* is not in pain! If the abstract object *Painfulness* is to ground anything (including a relation of dispositional directedness), it certainly can't do so because it is in pain.

There's a sense in which the problem I am pointing to is a familiar problem that applies to all accounts of abstract objects. Roughly put, the problem is that, because abstract objects are typically defined negatively (as non-spatial, non-temporal, non-physical, non-causal, and non-mental), it is exceedingly unclear what we should think about the positive, qualitative nature of such objects. Builes (2021) has argued that abstract objects like numbers are best thought of as "bare particulars": objects that have no positive qualities at all. If this view is correct, then the intrinsic, qualitative nature of *Sphericity* would be exactly the same as the intrinsic, qualitative nature of *Triangularity*, namely both of them would lack any qualitative nature at all.¹⁰ However, if abstract objects are "bare" in this way, then grounding dispositional facts in terms of abstract objects would be just as problematic as grounding dispositional facts in terms of "bare quiddities", which Tugby and other proponents of GP agree should be avoided.

5. Aristotelian GP

So far, we have looked at how GP fares with Nominalism and Platonism. How does it fare with an Aristotelian view of properties? The short answer is: it depends.

all qualities *extrinsic* insofar as all facts of the form [x is Q] are grounded in facts about external objects (e.g. other spherical objects or classes). Consequently, if dispositional facts of the form [x is D] are grounded in qualitative facts of the form [x is Q], then (if we accept the transitivity of grounding) dispositional facts will also be grounded in facts about external objects, rendering all dispositions extrinsic. This might give Nominalist defenders of GP extra reason to uphold Ostrich Nominalism, rather than Resemblance Nominalism or Class Nominalism. For an independent defense of Ostrich Nominalism, see Guillon (2021). For further discussion of the possibility of extrinsic dispositions, see McKittrick (2018: ch. 8).

¹⁰ Other authors go even further than Builes (2021). For example, building on an argument from Lewis (1986), Himmelright (2021) argues that all talk of abstract objects is meaningless, because we don't have a positive conceptual grasp of *what it is* to be an abstract property, number, proposition, etc. Mark Balaguer (1998, 2021) also uses the fact that we don't have a clear conception of what it is to be an abstract object to argue that there is no fact of the matter about whether any abstract objects exist in the first place.

Consider the analog of PGP in the Aristotelian case, this time in the case of pain:

Aristotelian GP (AGP): *P* is disposed to engage in avoidance behaviors *because* (i) *P* instantiates the Aristotelian property of *Pain* and (ii) the Aristotelian property of *Pain* is *Q*.

What should we insert for “Q”? The obvious candidate is that the Aristotelian property of *Pain* is painful. In the case of Platonism, it is a non-starter to say that an abstract object is painful. But, because Aristotelian properties are concrete entities with spatiotemporal locations, it is at least a *prima facie* option to say that the Aristotelian property of *Pain* is painful.

Should Aristotelians say that, more generally, the Aristotelian property of F-ness is F? It turns out that this is a live debate among Aristotelians. For example, Campbell (1990) is explicit in his particular bundle theory of tropes that, for example, the intrinsic qualitative character of a *redness* trope is that it is red.¹¹ However, there are other Aristotelian views where this is not so clear. For example, Armstrong (1978: 87) has argued that there are other theories of tropes, such as “Natural Class Trope Nominalism”, that entail that tropes are “bare” in a way that would similarly be problematic for GP.¹²

Aristotelian views about properties are a very large camp, and it is far beyond the scope of this paper to adjudicate what the best version of Aristotelianism is. However, insofar as there are at least live options for how to fill in AGP in an intuitive way, Aristotelians are in better shape than Platonists when it comes to GP.

6. Conclusion

In broad strokes, GP says that things in the physical world behave in the way that they do because of what the Xs are qualitatively like. But there are various choices for what “the Xs” could be. One could say that things behave in the way that they do because of what *individual material objects* are qualitatively like (which is consistent with Nominalism), or because of what *concrete immanent properties* are qualitatively like (which requires Aristotelianism), or because of what *abstract transcendent universals* are qualitatively like (which requires Platonism).

¹¹ The kinds of issues discussed in note 9, with respect to whether qualities are intrinsic or extrinsic on various Nominalistic accounts, also arise for Aristotelians. For example, some Aristotelians argue that the qualitative nature of concrete properties is explained in terms of resemblance facts or class membership facts, which would make the qualitative nature of concrete properties extrinsic to them. On Campbell’s (1990) view, the qualitative nature of tropes is intrinsic to them.

¹² See Ehring (2011: 193-199) for further discussion on whether tropes are problematically “bare” under Natural Class Trope Nominalism.

We are all familiar with the kinds of qualities possessed by concrete objects: some things are spherical, and some things are painful. However, it is entirely unclear what kinds of qualities are possessed by abstracta, since abstracta are all non-spatial, non-temporal, non-causal, non-physical, and non-mental. In particular, abstract objects lack the kinds of geometric and mental qualities that are used to motivate GP in the first place.

Defenders of GP acknowledge that dispositions should not be taken to be grounded in “bare quiddities”: substantive qualities are needed to ground corresponding dispositions. So, the challenge for Platonic versions of GP is this: why is grounding dispositions in *abstracta* any better than grounding dispositions in bare quiddities?^{13,14}

References

- Armstrong, David. 1978. *Universals and Scientific Realism: A Theory of Universals*. Cambridge: Cambridge University Press.
- Balaguer, Mark. 1998. *Platonism and Anti-Platonism in Mathematics*. New York: Oxford University Press.
- Balaguer, Mark. 2021. *Metaphysics, Sophistry, and Illusion: Toward a Widespread Non-Factualism*. Oxford: Oxford University Press.
- Barker, Stephen, 2009. Dispositional Monism, Relational Constitution and Quiddities. *Analysis* 69, no. 2: 242–250.
- Bird, Alexander. 2007. *Nature’s Metaphysics: Laws and Properties*. Oxford: Oxford University

¹³ Kimpton-Nye (2021) and Tugby (2022) have argued that, following Schaffer (2017), grounding connections between facts do not always have to be “transparent” (in the sense that the grounding facts *a priori* entail what they ground). So, on this view, one might think that one could simply posit a non-transparent grounding connection between facts about abstract objects and certain dispositional facts. However, both Kimpton-Nye and Tugby (and supporters of GP more generally) still acknowledge that bare quiddities would not be capable of grounding dispositions (see note 7). After all, the mere fact that grounding connections do not necessarily have to be transparent does not imply that it is possible for any fact to ground any other fact (e.g. it does not imply that Socrates can ground the singleton set containing Aristotle). So, anyone who thinks that bare quiddities are not capable of grounding dispositions (regardless of whether they also think that grounding connections are not necessarily transparent) is faced with the challenge of identifying an asymmetry between abstracta and bare quiddities.

¹⁴ Thanks to two anonymous referees for their helpful feedback.

- Press.
- Builes, David. 2021. Why Can't There Be Numbers? *The Philosophical Quarterly* 72, no. 1: 65-76.
- Builes, David. 2022a. Ontology and Arbitrariness. *Australasian Journal of Philosophy* 100, no. 3: 485-495.
- Builes, David. 2022b. The Ineffability of Induction. *Philosophy and Phenomenological Research* 104, no. 1: 129-149.
- Builes, David. 2023. A Humean Non-Humeanism. *Philosophical Studies* 180, no. 3: 1031-1048.
- Builes, David. Forthcoming. Modal Idealism. In *Oxford Studies in Philosophy of Mind Volume 4*, edited by Uriah Kriegel. Oxford: Oxford University Press.
- Campbell, Keith. 1990. *Abstract Particulars*. Basil Blackwell Ltd.
- Chakravartty, Anjan. 2003. The Dispositional Essentialist View of Properties and Laws. *International Journal of Philosophical Studies* 11 (4): 393–413.
- Chakravartty, Anjan. 2007. *A Metaphysics for Scientific Realism: Knowing the Unobservable*. Cambridge University Press.
- Coates, Ashley. 2021. Making sense of powerful qualities. *Synthese* 198, no. 9: 8347-8363.
- Coates, Ashley. 2022. Events and the regress of pure powers: Reply to Taylor. *Analysis*.
<https://doi.org/10.1093/analys/anac031>
- Ehring, Douglas. 2011. *Tropes: Properties, Objects, and Mental Causation*. Oxford: Oxford University Press.
- Fine, Kit. 2012. Guide to Ground. In *Metaphysical Grounding*, edited by Fabrice Correia and Benjamin Schnieder, 37-80. Cambridge: Cambridge University Press.
- Guillon, Jean-Baptiste. 2020. A Common Sense Defence of Ostrich Nominalism. *Philosophia*

- 49, no. 1: 71-93.
- Heil, John. 2003. *From an Ontological Point of View*. Oxford: Oxford University Press.
- Hildebrand, Tyler. 2016. Two Types of Quidditism. *Australasian Journal of Philosophy* 94, no. 3: 516-532.
- Himelright, Jack. 2021. A Lewisian Argument Against Platonism, or Why Theses About Abstract Objects Are Unintelligible. *Erkenntnis*. <https://doi.org/10.1007/s10670-021-00489-4>.
- Jaag, Siegfried. 2014. Dispositional essentialism and the grounding of natural modality. *Philosophers' Imprint* 14, no. 34: 1-21.
- Jacobs, Jonathan. 2011. Powerful Qualities, Not Pure Powers. *The Monist* 94, no. 1: 81-102.
- Kimpton-Nye, Samuel. 2021. Reconsidering the Dispositional Essentialist Canon. *Philosophical Studies* 178, no. 10: 3421-3441.
- Lewis, David. 1986. *On the Plurality of Worlds*. Blackwell Publishing Ltd.
- Martin, C. B. 2008. *The Mind in Nature*. Oxford: Oxford University Press.
- McKittrick, Jennifer. 2018. *Dispositional Pluralism*. Oxford: Oxford University Press.
- Mørch, Hedda. 2017. The evolutionary argument for phenomenal powers. *Philosophical Perspectives* 31, no. 1: 293-316.
- Mørch, Hedda. 2018. Does Dispositionalism Entail Panpsychism? *Topoi* 39, no. 5: 1073-1088.
- Mørch, Hedda. 2019. Phenomenal knowledge why: the explanatory knowledge argument against physicalism. In *The Knowledge Argument*, edited by Sam Coleman. Cambridge University Press.
- Mumford, Stephen. 2004. *Laws in Nature*. Routledge.
- Psillos, Stathis. 2006. What Do Powers Do When They Are Not Manifested? *Philosophy*

and Phenomenological Research, 72, no. 1: 137–156.

Schaffer, Jonathan. 2017. The Ground Between the Gaps. *Philosophers' Imprint* 17, no. 11: 1-26.

Smith, Deborah. 2016. Quid Quidditism Est? *Erkenntnis* 81, no. 2: 237-257.

Swinburne, Richard. 1980. Properties, Causation, and Projectibility: Reply to Shoemaker. In *Applications of Inductive Logic*, edited by L. Jonathan Cohen and Mary Hesse, p. 313-320. Oxford: Oxford University Press.

Tugby, Matthew. 2012. Rescuing dispositionalism from the ultimate problem: reply to Barker and Smart. *Analysis* 72, no. 4: 723-731.

Tugby, Matthew. 2021. Grounding theories of powers. *Synthese*. 198, no. 12: 11187-11216.

Tugby, Matthew. 2022. *Putting Properties First*. Oxford: Oxford University Press.

Yates, David. 2018. Inverse functionalism and the individuation of powers. *Synthese* 195, no. 10: 45525-4550.