

The Metaphysics of Powers

Their Grounding and their Manifestations

**Edited by
Anna Marmodoro**

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The Metaphysics of Powers

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Their Grounding and their
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Introduction

Anna Marmodoro

The importance and centrality of powers in various domains of philosophical inquiry has been argued for by many.¹ Powers are properties like fragility and electric charge, whose possession *disposes* their bearer in a certain way. The instantiation of fragility in the glass disposes the glass to break if struck in the appropriate circumstances. The striking is the stimulus, and the breaking the manifestation of fragility.

Consider the electric charge of an electron. Is the electron's charge a property like its mass and its shape? Is it as primitive a property of the electron as they are? If not, is it reducible to such properties? Or is it grounded on such properties? Can we make sense of the notion of ungrounded powers? *Can there be a world of powers only?* This has become one of the driving questions in the investigation into the metaphysics of powers, and it is central to nearly all the volume's essays.

THE GROUNDING OF POWERS

The question of whether there can be a world of powers only divides metaphysicians into two camps, according to what kinds of properties they think are required at the fundamental level to provide an adequate account of the manifest world. On the one side there are those who hold *Property Dualism*: there are two irreducible kinds of properties, both fundamental: the so called categorical (or qualities) and the dispositional ones. On the other side there are those who hold *Property Monism*: there is only one fundamental kind of property.

But if there is only one kind of fundamental property, what is it?

Some hold that *only dispositional* properties are fundamental, while non-dispositional properties, if they exist, are higher order. This view is also known in the literature as Pandispositionalism. Strong Dispositional Essentialism for example is a view of this kind, and is held e.g. by Sidney Shoemaker and most notably in the current debate by Alexander Bird.

Others argue that there is only one kind of property at the fundamental level and such properties are *powerful qualities*; namely, all fundamental

properties are *both categorical and dispositional*. This position was put forward by Charlie Martin and John Heil and has been labeled the Identity Theory of Properties.

A further monist position, Categoricalism, holds that fundamental properties are essentially non-dispositional and that dispositions are conferred to objects on the basis of contingent laws of nature. David Armstrong has argued for this position, which has already been discussed extensively in the literature.

Arguments in favor and against the view that all fundamental properties are dispositional are investigated in this volume, focusing on a series of *regresses* that critics of the all-powers view have put forward in the recent literature. Jonathan Lowe claims that the view that powers are ungrounded faces a ‘No Identity Fixation’ vicious regress; Stathis Psillos argues that the very notion of ungrounded powers is epistemologically and metaphysically incoherent, because ungrounded powers have a regressive nature; and Richard Swinburne charges the all-powers view with an epistemological regress.

The regresses are aimed at probing the all-powers view on the following issues: *Do powers need to be grounded in non-powers?* And what is the nature of the grounding-relation, if there is any? These questions have to be addressed both by those who hold that all fundamental properties are ‘pure’ powers (that is, powers with no grounding in categorical properties) and by those who hold that there are at least some pure powers.

The charge of incoherency is the first challenge to the all-powers view addressed in this volume. Anna Marmodoro, in her ‘Do Powers Need Powers to Make Them Powerful? From Pandispositionalism to Aristotle’, engages with one of the most recent arguments of this type, put forward by Stathis Psillos, who claims that pure powers have a regressive nature which makes them incoherent to us. Marmodoro shows that Psillos’s regress is but an instance of the regress developed by Aristotle on the assumption that an entity is related to its essence. She compares Aristotle’s, Bradley’s, and Psillos’ regresses, showing that Bradley’s and Psillos’s (different) conclusions from their regress arguments lead to impasses. She argues that, contrary to what Psillos concludes, pure powers *do not (regressively) need further powers* to make them powerful; rather, they do what they do because they are powers. This lifts the hindrance that Psillos had claimed to admitting pure powers into the ontology, if physics gave us reasons to posit them.

Other regress arguments against pure powers are discussed in this volume by Kristina Engelhard and Jennifer McKittrick, with different conclusions.

Engelhard in her ‘Categories and the Ontology of Powers. A Vindication of the Identity Theory of Properties’ is motivated by the idea that the difference between an object with a disposition and one just like it without that disposition is qualitative; so we should think of dispositions as making qualitative contributions to objects. Engelhard calls this the ‘dualist intuition’, which she sees as driving Lowe’s and Swinburne’s regress arguments against Pandispositionalism. She puts forward the position that all

properties are powers *with an intrinsic 'dual structure'*, qualitative and dispositional.

But can we have epistemic access to powers if all properties are powers? McKittrick engages with this issue, raised most notably by Swinburne. In her 'Manifestations as Effects' she examines regresses recently advanced against pandispositionalism, with a view to the question of what the metaphysical status of a power's manifestation is. McKittrick shows the force of the Swinburne-style argument that, on the pandispositionalist view, all manifestations become unobservable. She concludes that non-powers must be posited.

The same conclusion, namely that there are two irreducible kinds of properties, is argued for in this volume also by Jonathan Lowe and Brian Ellis. Lowe in his 'On the Individuation of Powers' investigates the question of whether the pandispositionalist view provides adequate criteria of individuation for powers. His starting point is the widely held and plausible position that powers are individuated, at least partly, by their manifestations. But on a pandispositionalist view the manifestations of powers themselves always consist simply in the instantiation of further powers. Thus, Lowe argues that pandispositionalism is prey to a 'No Identity Fixation' vicious regress, or else to circularity in the individuation of powers. He engages with the most recent arguments that have been put forward to avert this kind of threat by a number of philosophers who appeal to structuralist considerations, but argues that their responses are inadequate and thus concludes that some properties must be non-powers.

Can causal powers even exist if ontology admitted no categorical properties? Ellis in his 'Causal powers and categorical properties' offers arguments for the *ontological dependence* of all causal powers on categorical properties. For, the instances of causal powers must all have contingent locations, i.e. spatiotemporal relations to other things. Powers must act from somewhere. But the instances of location do not have locations contingently; they *are* locations. Nor do the instances of location have any causal powers essentially. For, any such causal powers would have to be immovable. Furthermore, Ellis argues, causal powers must all have defining laws of action, specifying manifestation and circumstances, and such laws of action of all causal powers involve categorical properties essentially.

But if one holds, like McKittrick, Lowe, and Ellis in this volume, that both powers and non-powers are to be admitted in our ontology, the question arises of what the relation of powers to non-powers is.

A position which is discussed in this volume is that neither the categorical nor the dispositional are reducible; neither is higher order; rather, each property is both categorical and dispositional. *Are powers, then, metaphysically simple or do they have an internal structure?* Martin and (in this volume) Heil have put forward the Identity Theory of Properties. They hold that properties are metaphysically simple; Heil (2003) suggests as a model for his theory a Necker cube, that can be *seen now one way, now*

another. The dispositional and the categorical are not different aspects of a property; rather, they are *different ways of considering the property*.

Heil addresses directly the question of whether powers have an internal structure in his contribution to this volume 'Qualities and Powers', by engaging critically with a position put forward by Peter Unger. Unger and Heil agree in holding that non-powers figure ineliminably in the individuation of powers. But Unger also posits a contingent relation of covariance between the categorical and the dispositional, for all properties—from which it follows that powers are internally structured. Heil offers reasons why contingency should be rejected and properties should be conceived as *powerful qualities*.

THE NATURE OF A POWER'S MANIFESTATION

What is the nature of a power's manifestation? This question is particularly central to Toby Handfield's and Jennifer McKittrick's essays. Handfield in his 'Dispositions, Manifestations, and Causal Structure' explores the idea that the manifestations of a disposition are causal processes that constitute a *natural kind*. In order to form a natural kind, such processes must have a common intrinsic structure. For causal processes, the relevant structure must be in some sense causal. Handfield examines various ways in which such an intrinsic causal structure might be represented, and considers whether or not it is plausible that such a structure exists in fundamental physical processes.

In her 'Manifestations as Effects' McKittrick discusses whether manifestations are events, or instantiations of properties, or both. On the pandispositionalist view she engages with, if manifestations are instantiation of properties, and all properties are powers, regresses follow (most importantly in her view the one concerning the non-observability of the manifestations of powers, as we have seen previously). On the other hand if manifestations are events, this is also problematic in cases where what actually occurs is not the kind of effect that the power is a power for, but rather a complex interaction of various powers. An alternative is to think of manifestations as *contributions* to effects rather than effects, as e.g. George Molnar has suggested. McKittrick examines and then argues against this proposal, and for the view that a single kind of power can have different kinds of effects, some of which involve the instantiation of non-dispositional properties.

Can powers have more than one manifestation-type? For example, are the cracking and the breaking of a glass both manifestations of the very same power, fragility? In his 'On the Individuation of Powers' Lowe challenges this view by posing a dilemma for those who suppose that a single power could have more than one manifestation-type.

An ice cube cools the lemonade, and the lemonade melts the ice cube. Cooling and melting are manifestations of two different but somehow interrelated powers. The slamming of the door for example bears no such

relation to either the lemonade's cooling or the ice's melting. Manifestations such as the lemonade's cooling and the ice's melting are the *mutual products* of powers through interaction. But *what explains their coupling?* Williams in his 'Puzzling Powers: the Problem of Fit' raises this issue as a difficulty for those who hold there are irreducible causal powers (whether all properties are pure powers or only some). The difficulty is to explain how it is that powers are intrinsically powerful and yet *causally harmonious*—that is, mutually interrelated. Williams proposes as a way forward building an appropriate metaphysical framework in which powers can be accommodated: Power Holism (which bears analogies with semantic holism).

DISPOSITIONAL ANALYSES OF CAUSATION

Under the hammer's blow, the glass shatters. *Can causation be adequately explained by a dispositional theory of properties?*

Causes dispose towards their effects and often produce them. But a set of causes, even though they may succeed in producing an effect, cannot necessitate it since the effect could have been counteracted by some additional power. Stephen Mumford and Rani Anjum in their 'A Powerful Theory of Causation' argue for this view and note that powers compose additively and subtractively, as vectors do. They develop a model for representing *powers as constituent vectors* within an n -dimensional quality space, where composition of causes appears as vector addition. This model throws new light on causal modality and cases of prevention, causation by absence, and probabilistic causation.

Also exploring the prospects of a dispositional account of causation, Bird in his 'Causation and the Manifestation of Powers' suggests an account of causation that identifies it 'with activity of the underlying ontology'. On an all-powers view, one simple proposal for accounting for causation is that A causes B when A is the stimulus of some disposition and B is the corresponding manifestation. Bird examines some of the advantages and disadvantages of this simple dispositional analysis of causation. He argues that it avoids some of the counter intuitive consequences of the counterfactual approach to causation and offers a promising way of accounting for the distinction between cause and condition. Furthermore, the dispositional analysis offers insights into the modality of the relation between cause and effects (see the following section).

THE NECESSITY OF THE RELATION BETWEEN A POWER AND ITS MANIFESTATION(S)

Are powers and manifestations related by necessity? Ellis in his 'Causal Powers and Categorical Properties' argues for a full commitment to an

anti-Humean position with respect to causation. His line of argument assumes that Hume's causal phenomenalism is the only plausible alternative to causal realism. But causal processes necessarily involve causally related states of affairs. What is the nature of this relationship? Hume's causal phenomenalism leaves this relationship unexplained. This is why, Ellis argues, causal realism is the better metaphysical option. If one is a causal realist, one must suppose that causal powers are dispositional, i.e. have identities that depend essentially on what they would dispose their bearers to do in the circumstances in which they would be effective.

But such a commitment is not without difficulties, some of which are raised in this volume by Marcus Schrenk in his 'Antidotes for Dispositional Essentialism'. Dispositional essentialism draws (part of) its anti-Humean strength from the idea of metaphysical necessity put forward by Kripke and Putnam. Kind Essentialism claims that tigers have certain features necessarily or else they would not be tigers; by analogy Dispositional Essentialism claims that dispositions have their manifestation-type M necessarily (in appropriate circumstances C, which include the stimulus) or else they would not be the dispositions they are. But, Schrenk notes, there are two major dissimilarities between Kind Essentialism *à la* Kripke and Putnam and Dispositional Essentialism: firstly, for the latter, the relata are not only individuals or kinds or properties but also include world state types and events; secondly the manifestation of powers unfolds in time; it is not expressed by a-temporal statements such as those about metaphysical necessity.

Handfield in his 'Dispositions, Manifestations, and Causal Structure', pursues what he calls a 'Humean Dispositionalism' program: he wants to retain the Humean principle of recombination: there are no necessary connections between distinct existences; which leads him to claiming that there are no necessary connections between a property and the causal powers it confers to the bearer. Rather than necessary connections, Handfield argues, a property and its process kind (manifestation kind) stand in virtue of their intrinsic natures in a relation such that they would not be the things they are if the relation did not hold. Handfield sees Humean Dispositionalism as an advancement on Dispositional Essentialism which says that natural properties are essentially such as to confer certain powers on their bearers without any further explanation (e.g. Bird and Ellis); and also as an advancement on the mere appeal to brute modal facts of some variety (e.g. Mumford).

Mumford and Anjum in their 'A Powerful Theory of Causation' argue that "dispositionality has an important, *real*, and *irreducible modal force* of its own". They hold that causes do not necessitate their effects; they produce them but in an irreducibly dispositional way, in a way that is less than necessary but more than purely contingent. And so does Bird in his 'Causation and the Manifestation of Powers'. He sees the relation between

a disposition and its manifestation in response to stimulus as *ontologically basic and not reducible*. The sufficiency of the stimulus for the effect of a disposition is of a subjunctive kind, and so has modal force, but less than full metaphysical necessitation.

NOTE

1. The terms 'powers' and 'dispositions' are used interchangeably in what follows.

1 On the Individuation of Powers

E. J. Lowe

INTRODUCTION

It is often maintained—I think with considerable plausibility—that powers are individuated at least partly by their manifestations. But it is also sometimes held that the manifestations of powers themselves always consist simply in the acquisition of *further powers*. This seems to raise the threat of a vicious circularity (or else an infinite regress) in the individuation of powers, requiring us to acknowledge the existence of at least some power-manifestations—and hence some properties—that are *not* powers. Recently, a number of philosophers have appealed to structuralist considerations in order to avert this kind of threat, but in what follows I shall argue that such a strategy is doomed to failure. Some properties, I shall conclude, must indeed be non-powers.

IDENTITY AND INDIVIDUATION

Suppose we believe that *powers exist*, perhaps because we espouse Quine's criterion of ontological commitment—"To be is to be the value of a bound variable"—and are convinced that scientific theories that we believe to be true quantify over powers.¹ Perhaps we shall then also want to espouse Quine's other famous dictum—"No entity without identity"—and thus accept that we are obliged to offer a *criterion of identity* for powers, on the grounds that no clear sense can be made of certain entities being possible values of our variables of quantification if no principled account can be offered of the identity and distinctness conditions of such entities.² A criterion of identity for entities of a kind *K* is supposed to be a principle which specifies the identity (and thereby also the distinctness) conditions of *K*s in an *informative or non-trivial* way—a principle that can be stated in the following form:

(CI) If *x* and *y* are entities of kind *K*, then $x = y$ iff *x* and *y* stand to one another in the relation R_K ,