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## On Powerful Qualities

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A thesis submitted in partial fulfillment of the requirements for the Doctor of Philosophy degree in Philosophy

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## Abstract

The present work is a critical examination of the Powerful Qualities Ontology. Categoricalism affirms that intrinsic properties are quiddistic or qualitative in nature, and Pure Powers Theory affirms that they are by nature powerful. The Powerful Qualities Ontology, though, affirms that intrinsic properties are both qualitative and powerful, and that by being a more robust ontology than both Categoricalism and Pure Powers Theory, it promises to account for more phenomena and solve more problems than these rival theories. Despite its advantages, however, I challenge the feasibility of the Powerful Qualities Ontology. In chapter 1, I define important terms and provide a topography of the general debate on powers. In chapter 2, I discuss Martin and Heil's Identity Theory, which is the standard account of the Powerful Qualities Ontology. I also discuss Jacobs' Truthmaking View, which is supposed to be a restatement of Identity Theory. In chapter 3, I attempt to undermine Strawson's case for Identity Theory. In chapter 4, I discuss Giannotti's notion of aspects, which he introduces for the purpose of further articulating the Powerful Qualities Ontology. I also examine his Dual Aspect Account of powerful qualities. In chapter 5, I discuss Taylor's collapse argument against Identity Theory. Taylor has argued that Identity Theory collapses into the Pure Powers View, and while I agree with him in important respects, I raise some doubts as to whether he is successful in establishing his conclusion. In chapter 6, I examine a couple of Grounding Theories of powerful qualities, and attempt to show how they are inadequate with respect to fundamental conceptual issues. Throughout the present work, I challenge the feasibility of several versions of the Powerful Qualities Ontology, but in chapter 7, I discuss topics relevant for future work on powerful qualities, as well as powers in general. Here I discuss alternative ontologies to Identity Theory, and different theories regarding the laws of nature that are relevant to powers ontologies. I conclude by suggesting that Powers Theorists should seriously consider more robust powers ontologies, as they are more promising than parsimonious ones in accounting for more phenomena and solving more problems.

## Keywords

properties, powers, powerful qualities, Identity Theory, laws of nature, grounding

## Summary for Lay Audience

This dissertation is a philosophical investigation into the nature of properties. In ordinary discourse, we talk about different kinds of properties. We acknowledge that there are qualities (e.g., shape, colour, chemical composition), which pertain to what things are like. We also acknowledge that there are powers (e.g., fragility, combustibility, radioactivity), which pertain to how things behave. Different philosophical views assert that all the fundamental or natural properties of the world belong to one of these categories. Categoricalism asserts that properties are qualitative in nature, whereas Pure Powers Theory asserts that properties are powers by nature. Powerful Qualities Ontology, however, asserts that properties are both qualitative and powerful. By affirming that properties are both qualitative and powerful, the Powerful Qualities Ontology promises to solve more problems than both Categoricalism and Pure Powers Theory, without suffering from the same disadvantages as these theories. However, despite the advantages it promises, I challenge the feasibility of the Powerful Qualities Ontology. I mainly do so by philosophically evaluating several significant versions of the theory, arguing that the theory is vulnerable to deep conceptual issues. Theories of properties, such as the Powerful Qualities Ontology, have implications for how we can integrate our philosophical theories with our scientific theories and practice. Our scientific understanding regarding fundamental physics and the laws of nature are especially relevant to our understanding of properties. However, to this end, I suggest that theories that are more robust than the Powerful Qualities Ontology should be seriously considered. More robust theories, such as Dualism (i.e., the view that there are fundamental qualities and fundamental powers), are more promising than the Powerful Qualities Ontology with respect to the integration of our philosophical and scientific theories.

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—D. Job Morales

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## Chapter 1

### 1 Introduction

In his “Four Disputes about Properties,” David Armstrong (2005) identified four of the most important questions regarding the metaphysics of properties:

- (1) Are properties universals or tropes?
- (2) Are properties attributes of particulars, or are particulars just bundles of properties?
- (3) Are properties categorical (qualitative) in nature, or are they powers?
- (4) If a property attaches to a particular, is this predication contingent, or is it necessary?

The present work is a discussion regarding the third question: whether properties are essentially qualitative or powerful. The discussion will be concerned with *sparse* properties. Sparse properties are intrinsic, non-disjunctive, and non-negative. They are responsible for the objective resemblances of things and for their causal powers. They cut nature at its joints. They are relatively few (hence, “sparse”), and they provide a minimal basis for a complete characterization of the world (see Lewis 1983, 1986). They include, for instance, having a particular mass, having negative charge, having a particular chemical composition, and having a certain shape.<sup>1</sup>

The two main competing views on the question are *Quidditism* (or *Categoricalism*), which maintains that no property is an intrinsic power, and the *Pure Powers View*, which maintains that properties are nothing but powers. The present work will be a critical examination of another view, the *Powerful Qualities View*, which maintains that every intrinsic property is both powerful and qualitative. It is a sort of middle ground between Quidditism and the Pure Powers View, and in the present work, I will argue against its feasibility.

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<sup>1</sup> *Abundant* properties, by contrast, correspond to all meaningful predicates. There are many more of this type of property (hence, “abundant”). They can be extrinsic, disjunctive, and negative, such as being liked by Plato, being six feet tall or a lawyer, and being non-spherical. They include all sorts of gerrymandered properties such as Goodman’s (1955) infamous *grue* and *bleen*. Unlike sparse properties, they are not responsible for objective resemblances between things or their causal powers.

In the remainder of this introductory chapter, I will explain the nature and terms of the debate, as well as give a topography of the relevant theories.

## 1.1 Nature of the Debate

When discussing whether properties are essentially qualitative or powerful, the debate is not merely about what a property is—what makes it the property that it is rather than another. It is not simply a debate on the individuation of properties. Rather, the debate involves the question of what a property can do. It is not simply a matter of individuation, but a matter of modality as well. Indeed, the question of individuation has implications on the question of modality, and vice versa. The debate on the identity or essence of properties spills over into questions of causation and the laws of nature.

## 1.2 Terms of the Debate

The most important distinction in the debate is the categorical-dispositional distinction. This can and has been described alternatively as the qualitative-powerful distinction, or again, the quiddistic–powerful or quiddistic–dispositional distinction. In some cases, it has been conceived as the actual-potential distinction, although not quite in Aristotelian terms. Because of these various ways of construing the distinction, it will be helpful to settle on some preferred terms at the outset. Here then are basic descriptions of each kind of property, and my preferred terms for the distinction.

*A categorical or qualitative or quiddistic property is one that does not derive its identity from other properties. Rather, a quiddistic property is individuated by its quiddity, or in more general terms, by an intrinsic nature. It is often said that a quiddistic property has its identity primitively or by “bare numerical identity.” The comparison is often made as well that what haecceities are to individuals, quiddities are to properties. Since their identities are not derived from being in certain causal or nomic relations to other properties, quiddistic properties are interchangeable in their causal or nomic roles across possible worlds. For example, suppose that the properties that play the mass-role and the charge-role in the actual world are in essence quiddistic properties—call them  $f$  and  $g$ ,*



respectively. In some possible world,  $f$  could be the property that plays the charge-role in that world, and  $g$  the property that plays the mass-role.

I will avoid distinguishing these properties as “categorical” as opposed to the dispositional or powerful. The main reason is because the proponents of (intrinsic) dispositions or powers claim that these properties are indeed real and therefore categorical. Dispositional or powerful properties, according to these philosophers, are categorically properties. The term “categorical property” as opposed to the dispositional or powerful, gives the impression that the latter kind of property is not real, so to avoid confusion (or worse, question-begging), I will avoid using the term “categorical property.”<sup>2</sup>

What about “quiddistic” or “qualitative”? I will use either of these terms depending on the context. However, while these terms are related, they are not equivalent. As we will see later, the term “qualitative property” (or “quality”) can be used to refer to a quiddistic property (but not always), and “quiddistic property” (or “quiddity”) can be used to refer to a property that is either qualitative or non-qualitative. I will use these terms in this way.

A *dispositional* or *powerful* property is one that derives its identity from other properties. A dispositional or powerful property is *for* some other property, what is known as its *manifestation*. A disposition or power is disposed to bring about its manifestation under certain *stimulus conditions*, which are further properties. A dispositional property or power derives its identity from these other properties, their manifestation and stimulus conditions.<sup>3</sup> Dispositional properties are *not* interchangeable in their causal or nomic roles across possible worlds, since their roles are essential to their identity. For example, if mass is in essence a dispositional or powerful property, then for any world where the

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<sup>2</sup> For the same reasons, I will avoid using “actual property” to refer to such properties.

<sup>3</sup> That a property *derives* its identity from other properties may be construed *relationally* or *non-relationally*. Molnar (2003), Heil (2003), and Martin (2008), for example, thinks that this “derivation” (if it can be called that) is intentional, where intentionality is not construed as a relation. The idea is that just as a thought about  $x$  does not require  $x$ ’s existence to be the thought that it is, neither does a power for  $x$  require  $x$ ’s existence to be the power that it is, even though both thoughts and powers *point to* or are *for* something beyond themselves.

mass-role obtains, any property that plays the mass-role in that world just *is* the property of mass.

When it comes to distinguishing these from quiddistic properties, I use the terms “powerful property” (or “power”) and “dispositional property” (or “disposition”) interchangeably for the most part. To be sure, Alexander Bird points out that “dispositional property” is a more neutral term, since even philosophers who maintain that fundamental properties are quiddistic (e.g., Humeans) use “disposition” in a predicatory sense (2016, 361). Such philosophers can countenance *extrinsic* dispositions, which depend in part on contingent laws of nature or regularities that obtain in the world. Armstrong (1997), for example, thought that categorical properties are contingently identical to dispositions, depending on which laws of nature happen to obtain. He and other like-minded philosophers would deny, however, that there are powers or *intrinsic* dispositions. However, since the present work is mainly concerned with intrinsic dispositions in the above sense, I use “powerful property” (or “power”) and “dispositional property” (or “disposition”) synonymously, except where noted.

### 1.3 Topography of the Debate

Now that the terms have been decided, here is a topography of the relevant views. To begin, *Quidditism* (or *Categoricalism*, or *Categorical Monism*) is the view that *all* fundamental properties of the world are quiddistic. *Dispositional Realism* (or *Dispositionalism*, or *Dispositional Essentialism*) is the view that *some* fundamental properties are powers. The view that *only some* fundamental properties are powers (while others are quiddities) is called *Property Dualism* (or the *Mixed View*) while the view that *all* fundamental properties are powers is called the *Pure Powers View* (or *Dispositional Monism*, or *Pandispositionalism*). The view that every fundamental property is both powerful and qualitative is called the *Powerful Qualities View*.<sup>4</sup> This view is also often

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<sup>4</sup> Note that “qualitative” in the context of Identity Theory is not used in the exact same sense as in the context of Quidditism. In the context of Quidditism, whatever is qualitative is also quiddistic. Qualities, on this view, are quiddities, and hence, they are individuated primitively or intrinsically. However, on the Powerful Qualities View, qualitative properties are also essentially powerful properties. Because properties on this view are essentially powerful, they are individuated (at least in part) in terms of what they are *for*, and not simply intrinsically.

referred to as *Identity Theory*, but as we shall see later, there are *Non-identity* versions of the view. The main focus of the present work will be on the Powerful Qualities View, but in order to appreciate this view of properties, it will be helpful to contrast it with the debate's three main contenders (broadly construed): Quidditism, the Pure Powers View, and Dualism. To this end, let me first discuss each view in more detail.

### 1.3.1 Quidditism: problems and further qualifications

Again, Quidditism is the view that the properties of the world are individuated primitively, or by an otherwise intrinsic nature. Quidditism is typically motivated by the Humean doctrine that there are no necessary connections in nature. Thus, Quidditists maintain that the laws of nature are contingent, and that properties and the laws that connect them can be recombined arbitrarily to produce genuine new possibilities (Lewis 2009, 209). This recombination is without restriction.<sup>5</sup> This means that quiddities can arbitrarily swap their nomic roles across possible worlds while retaining their identity. As Lewis puts it,

*Quidditism* is the premise that tells us that the permutation is indeed a different possibility. Two different possibilities can differ just by a permutation of fundamental properties. . . . to reject Quidditism is to accept identity of structurally indiscernible worlds—that is, worlds that differ just by a permutation or replacement of properties. (2009, 209–10)

Quidditism is beset with some well known problems, which in turn have given rise to more refined forms of the view. The first and most important problem for Quidditism is *skepticism* with respect to our knowledge of which fundamental properties there are in the world. Lewis (2009) had argued for what he called “Ramseyan Humility.” His idea is this. Suppose that we have a final scientific theory of the world, that is true and complete, and that gives us an inventory of those fundamental properties that play an active role in nature. Call this theory *T*. *T* includes theoretical terms implicitly defined by *T* (*T*-terms), and non-theoretical terms (*O*-terms). The fundamental properties will be named by *T*-terms (although some *T*-terms will name things other than fundamental properties). The

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<sup>5</sup> At the very least, it involves *minimal* restrictions. Hildebrand, for example, notes the following restriction: “that two determinates of the same determinable cannot be co-instantiated by the same object at a given spatiotemporal point” (2016, 517–18).

Ramsey sentence of  $T$  can be constructed by replacing all  $T$ -terms with existentially bound variables.  $T$  will have one unique actual realization, but many possible realizations. However,

Suppose it does indeed have multiple possible realizations, but only one of them is the actual realization. Then no possible observation can tell us which one is actual, because whichever one is actual, the Ramsey sentence will be true. There is indeed a true contingent proposition about which of the possible realizations is actual, but we can never gain evidence for this proposition, and so can never know it. If there are multiple possible realizations, [Ramseyan] Humility follows. (Lewis 2009, 207)

For Lewis, we can have knowledge of the nomological structures that hold between fundamental properties. Equivalently, we can know that the Ramsey sentence of  $T$  is true. However, we cannot have knowledge of the fundamental properties themselves. Even if the Ramsey sentence of  $T$  is true, if there are multiple realizations, our observations will not be able to discriminate between the actual realization from the other possible realizations.

That there are multiple realizations follows from Quidditism and recombability. Lewis shows this with an argument from permutation, which goes like this. Take the actual world and consider two of its fundamental properties  $F_1$  and  $F_2$ . We get a new possible realization simply by permuting these two properties, that is, a possible world where  $F_1$  fills the role that  $F_2$  plays in the actual world, and vice versa (see Lewis 2009, 208).

While some philosophers are content to accept the skeptical conclusions of Lewis' position, Jonathan Schaffer (2005) argues that knowledge of quiddities is possible. He argues that quiddistic skepticism is just a species of external world skepticism: in particular, "it is skepticism about the quiddistic aspect of the external world" (Schaffer 2005, 20). Thus, as Schaffer maintains, any answer to external world skepticism is thereby an answer to quiddistic skepticism.

Besides skepticism, there are a couple of other related problems with Quidditism that are worth mentioning. One problem is that Quidditism entails *distinctions without difference*. Quidditism, insofar as it involves primitively individuated properties and unrestricted recombability, entails that there can be two worlds that are structurally identical, but

differ only with respect to which properties realize which causal or nomic roles. This entails, as Robert Black says, “an implausible plethora of distinct possible worlds.” He continues,

Let us start by considering the world isomorphic with ours, but where a quark colour has swapped places with a quark flavour. To the inhabitants of such a world, their world looks just like ours, but in reality it is supposed to be quite different. Can that really be? My intuition is that to play the nomological role of some colour or flavour is to be that colour or flavour, and that the idea of two qualities swapping nomological roles is thus unintelligible. (2000, 94)

This might just be one way of restating Lewis’ permutation argument, but whereas quiddistic skepticism (Ramseyan Humility) emphasizes an epistemological consequence of Quidditism (and recombability), this problem emphasizes an ontological consequence. That two fundamental properties,  $F$  and  $G$ , are primitively individuated means that  $F$  and  $G$  are distinct for no other reason than that  $F$  is the property that it is, and  $G$  is the property it is. They are not distinct in virtue of any qualities they possess or nomic roles they fill. This type of individuation is sometimes described as “bare numerical identity.” And it is because quiddities are individuated as such and can be recombined by permutation that we get “an implausible plethora” of structurally and qualitatively identical worlds, that are nonetheless distinct.<sup>6</sup>

Yet another problem is the *argument from science*. John Hawthorne puts forward the following version of the argument:

The best case for thinking that the causal profile of a property exhausts its nature proceeds . . . via the thought “We don’t need quidditative extras in order to make sense of the world.” Let us return to negative charge. All scientific knowledge about negative charge is knowledge about the causal role it plays. Science seems to offer no conception of negative charge as something over and above “the thing that plays the charge role.” If there were a quiddity that were, so to speak, the role filler, it would not be something that science had any direct cognitive access to, except via the reference fixer “the quiddity that actually plays the charge role.” Why invoke what you don’t need? Unless certain logical considerations forced

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<sup>6</sup> If we also take into account Lewis’ *replacement* argument for Ramseyan humility, we might even have an infinity of such worlds. The argument generates possibilities by taking the actual world and replacing the fundamental properties with *alien* properties, that is, those fundamental properties (if any) which are instantiated in other possible worlds, but not in the actual world.

one to suppose that properties are individuated by something over and above their causal role, then why posit mysterious quiddities? (Hawthorne 2001, 368–69)

If Hawthorne is correct, then we should reject Quidditism on the basis of parsimony. Science characterizes certain fundamental properties in terms of their nomic roles, but it does not tell us which properties fill that role. On the grounds of parsimony, we should prefer an ontology that does not go beyond the empirical science unless it is necessary to do so. However, as the argument goes, it is not necessary to postulate quiddities since we can individuate these properties on the basis of their causal role. Thus, we do not need to include quiddities in our ontology.

Now, this argument from science has motivated Quidditists to further qualify their views. Just as Dispositionalism is divisible into several species (pure powers, Dualism, powerful qualities), so is Quidditism. In particular, varieties of Quidditism can be identified according to two distinctions: austere vs extravagant, and qualitative vs bare.

As for Austere Quidditism and Extravagant Quidditism, Dustin Locke (2012) identifies this distinction in response to the argument from science. The main idea behind the distinction concerns whether a quiddity should be considered a nature had by a property, distinct from the property itself, or whether it should be identified with the property itself. On *Austere Quidditism*, a property *is* a quiddity. (In other words, a property *is* a nature.) On this view, primitive individuation or bare numerical identity holds in this way: *F* is distinct from *G* because *F* is the property that it is, and *G* is the property that it is.

On *Extravagant Quidditism* a property *has* a quiddity, which is distinct (but perhaps not wholly) from the property itself. Properties, on this view, are individuated by their quiddities, but it may be said that there is nonetheless primitive individuation or bare numerical identity in two senses. First, a quiddity *p* is primitively individuated (or has bare numerical identity) from another quiddity *q* on the grounds that *p* is the quiddity that it is and *q* is the quiddity that it is. There is nothing more to their being distinct from one another. Second, a property *F*, which has quiddity *p*, is distinct from *G*, which has quiddity *q*, because *F* has *p* and *G* has *q*, which are primitively distinct quiddities. While the properties *F* and *G* themselves are not primitively individuated, they nonetheless have

bare numerical identity insofar as they can be distinct (on the basis of their quiddities), *even if there are no qualitative differences between them.*

Locke prefers Austere Quidditism given the argument from science and the consideration for parsimony. While the argument challenged the need for “quidditative extras,” Austere Quidditism maintains that there are no such extra entities, but that the quiddities just are the properties themselves. This is one response to the argument. Another response is to affirm that there is a need for such extras. This is the line of defence that Tyler Hildebrand (2016) takes. Although he does not use the same terms that Locke does, his version of Quidditism can be categorized as a version of Extravagant Quidditism. Furthermore, Hildebrand also maintains that quiddities are qualitative, which leads us to the next distinction.

Besides austere and extravagant versions, there is also the distinction between Qualitative Quidditism and Bare Quidditism (see Hildebrand 2016). *Qualitative Quidditism* maintains that quiddities (whatever they turn out to be) are qualitative characters (or *qualia*). Properties, then, can be individuated on the basis of their qualitative character. However, while Qualitative Quidditism maintains that there is more to a quiddity than *bare* numerical identity, there is still a sense in which it involves the notion of primitive individuation, which is essential to any species of Quidditism. Deborah Smith explains this as follows:

However, in the case of individuals that instantiate fundamental properties, the qualitative feature is primitive and unanalyzable. Nothing can be said about what makes fundamental property  $P_1$  distinct from fundamental property  $P_2$ . They just are distinct qualitative features of the individuals that instantiate them. It is in this sense that fundamental properties are appropriately said to be individuated by primitive or numerical identity.<sup>7</sup> (Smith 2016, 244)

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<sup>7</sup> Note that here Smith is talking about qualitative *austere* quiddities. Properties can be individuated primitively based on their qualitative natures, because they *are* qualitative natures. It is not as clear whether the same is true on Qualitative *Extravagant* Quidditism. On this version of Quidditism, the quiddities *themselves* can be individuated primitively from one another, since these are qualitative natures. However, properties, on this view, *have* quiddities, which are qualitative natures, and they are individuated by these. It is not clear in what sense the properties (not the quiddities) can be individuated primitively. There might be a way to do it though. Quiddities, on Extravagant Quidditism, are distinct from properties, but they need not be *wholly* distinct. Perhaps some headway can be made by arguing for the primitive individuation of properties on the basis of their *partial* identity with their quiddities.

By contrast, *Bare Quidditism* maintains that quiddities lack any qualitative character whatsoever, and so they are individuated by bare numerical identity alone.

Another difference to note between qualitative and Bare Quidditism is their level of restrictiveness regarding recombability. On Bare Quidditism, properties are free to recombine with whatever other properties in whatever nomic roles. With the exception of some minimal constraints, the recombability of non-qualitative quiddities is relatively restrictionless. Qualitative Quidditism, by contrast, appears to impose at least some restrictions insofar as quiddities are qualitative natures. Smith (2016) thinks that it seems possible that the relationship between a qualitative property and (at least some of) its nomological roles is metaphysically necessary. She maintains that qualitative quiddities are still individuated primitively, but their qualitative natures nonetheless determine (at least in part) their nomological profile. To be clear, this is not Dispositionalism. On Dispositionalism, properties are *individuated* (or constituted) by their nomological profile. On Qualitative Quidditism, properties only *determine* (at least in part) their nomological profile (see Smith 2016, 250–51).

Qualitative Quidditism has some advantages over its bare counterpart with respect to the skeptical and distinction-without-difference objections. With respect to the first objection, because quiddities are qualitative in nature, we can tell which properties fill which roles. Even if the final theory  $T$  is multiply realizable, we can have knowledge beyond the fact that such and such nomic roles are filled. We can know by direct acquaintance of which qualitative properties fill these roles, and so we can have knowledge of the unique actual realization of  $T$  (see Hildebrand 2016). Note that this response requires some form of direct realism. Now, to be sure, whether this response is successful is another issue, but this line of thought is at least available to Qualitative Quidditism. It is hard to see how Bare Quidditism can meet the challenge of skepticism in this way, if at all.

Qualitative Quidditism has a response as well to the distinction-without-difference objection. Because quiddities have qualitative characters, if they were to swap nomic roles, we would get a new possibility with a qualitative difference. This can be so even if



skepticism holds. There would still be a qualitative difference, even if we are not in an epistemic position to know that difference. Qualitative Quidditism allows us to avoid an “implausible plethora” of structurally and qualitatively identical worlds. The “implausible plethora” is unavoidable on Bare Quidditism.

Now that the austere-extravagant and the qualitative-bare distinctions have been discussed, we can use these distinctions to identify four broad categories of Quidditism, which range from thinnest to thickest conceptions of quiddities (see also Figure 1). First, there is *Bare Austere Quidditism*, which involves the thinnest conception of properties (Armstrong 1997; Lewis 2009; perhaps Locke 2012). Although it is not clear which is thinner, in the middle we have *Qualitative Austere Quidditism* (Smith 2016) and *Bare Extravagant Quidditism* (Armstrong 1989). The former is thinner insofar as it identifies a property with its quiddity, whereas the latter is thinner insofar as its quiddities are bare. Finally, there is *Qualitative Extravagant Quidditism*, which involves the thickest conception of properties (Hildebrand 2016).

		Quidditism (Categoricalism)	
		Properties <i>are</i> or <i>have</i> quiddities?	
		<i>Are</i>	<i>Have</i>
Quiddities are qualitative or bare?	<i>Bare</i>	Bare Austere Quidditism	Bare Extravagant Quidditism
	<i>Qualitative</i>	Qualitative Austere Quidditism	Qualitative Extravagant Quidditism

**Figure 1: Types of Quidditism**

### 1.3.2 Dispositionalism: pure powers

Whereas Quidditism maintains that all fundamental properties of the world are quiddistic, Dispositionalism maintains that at least some fundamental properties are essentially powerful. Another way of saying this is that a property’s causal or nomic role is essential to its nature. As such, the individuation of a power is extrinsic, derived from other properties, and therefore, powers cannot retain their identity across possible worlds if

their nomic roles are swapped. Where powers are concerned, a change in nomic roles is thereby a change in properties.

The Pure Powers View is a species of Dispositionalism that maintains that *all* fundamental properties are essentially powerful. It is motivated by some key advantages over Quidditism. In particular, it manages to avoid the three objections discussed already which are problems for Quidditism. On the Pure Powers View, skepticism regarding which fundamental properties realize which nomic roles is no problem, because the nomic roles just are the fundamental properties. Since the objection assumes that we can know which nomic roles are realized, and since the Pure Powers View maintains that these nomic roles just are the fundamental properties, we do not need to be skeptical about which fundamental properties there are. On the Pure Powers View, if we know the roles, we know the properties.

The notion that fundamental properties are their nomic roles also provides an answer to the argument from science as well. The objection argued that we should not posit any entities that go beyond the scientific evidence. Since our scientific knowledge of fundamental properties (e.g., negative charge) is given in terms of nomic roles, and nothing beyond that, then we do not need to posit any “quidditative extras.” The Pure Powers View, though, is not threatened by this objection at all, since it does away with quiddities altogether. There is no need for “quidditative extras” on the Pure Powers View, since there is nothing beyond a property’s nomic role.

Finally, the Pure Powers View is not threatened by the distinction-without-difference objection. Pure Powers Theorists typically hold that even qualitative properties really are just powers, or clusters of powers (see Shoemaker 1984). As such, there are no distinct worlds which are both structurally and qualitatively identical. Two worlds that are both structurally identical, and hence, qualitatively identical, are really the same world. On the Pure Powers View, there is no “implausible plethora” of structurally and qualitatively identical worlds.

While the Pure Powers View has these advantages over Quidditism, it is not without its own problems. It is particularly known for being susceptible to a variety of regress

objections, all of which exploit the key idea that pure powers have extrinsic natures. Here I will mention three of the most well-known objections that have been discussed by Bird (2007a, 2007b). The first is an epistemic regress developed by Richard Swinburne (1980), who argues that if properties are pure powers, then they cannot be known. He writes:

Claims to recognize powers . . . need justification in terms of the effects which objects typically produce, and that involves justification in terms of the presence or absence of properties. But if properties are nothing but potentialities to contribute to powers, one could only justifiably attribute such properties to objects if one had observed their effects. And so on *ad infinitum*. The regress is vicious. (Swinburne 1980, 317)

According to this objection, if properties are pure powers, then in order to have a justified belief about the presence of a property, one would have to observe its manifestation (or effects). However, this manifestation itself is a property, so in order to have a justified belief about it, one would need to observe its manifestation, and so on. This leads to a vicious regress (or circle), resulting in the lack of justified beliefs about properties, let alone knowledge.

A standard response to this objection is that we can have knowledge of at least some properties without knowing their effects. Bird, for example, has suggested that if a property *J* can reliably manifest a mental property *K* in a subject *S*, then *S*'s being in state *K* might just be a state of knowledge about the presence of *J* (Bird 2007b, 518). Anjan Chakravartty has suggested that we can know about the presence of such properties by their effects on our measuring devices, since the properties of their readings are directly perceivable (2007, 136–7). Daniel Kodaj, on the other hand, argues that such responses are ultimately unsuccessful “unless one buys into an idealist or phenomenalist metaphysic that, in turn, renders the mind-independent world nonexistent or unknowable” (2020, 629).

The second regress is an ontological regress, to the effect that if properties are pure powers, then they are not “actual enough” or have sufficient “ontological content” to be real properties. Armstrong puts the problem as follows:

Can it be that everything is potency, and act is the mere shifting around of potencies? . . . Given a purely Dispositionalist account of properties, particulars would seem to be always re-packing their bags as they change their properties, yet never taking a journey from potency to act. For ‘act’, on this view, is no more than a different potency. (Armstrong 1997, 80)

If properties are pure powers, then they are just potencies for other properties, which turn out to be potencies for yet further properties, and so on. Unless there is some actual being (non-powerful, quiddistic properties) there will not be enough reality or ontological content in a world of pure powers. Armstrong himself has said, “Perhaps accepting that the purely spatiotemporal properties are categorical will give enough categorical basis to blunt the force of this criticism” (ibid.). Bird, on the other hand, has argued that pure powers actually have *more* ontological content than quiddistic properties (2007b, 521–2).

The third regress is concerned with the individuation of pure powers. According to E. J. Lowe, “The problem . . . is that no property can get its identity fixed, because each property owes its identity to another, which, in turn owes its identity to another—and so on, in a way that, very plausibly, generates either a vicious infinite regress or a vicious circle” (2006, 138). On this objection, if properties are pure powers, then there is supposedly no way to fix the transworld identity of a property. A property is individuated in relation to another property, which which is individuated in relation to another property, and so on, and hence, a vicious regress or vicious circle. Bird appeals to graph theory in order to meet this objection (2007b, 526–33). Chakravartty, on the other hand, has said that a property is not *constituted* by its relations to other properties, but rather, “its identity is determined by its *potentials* for such relations” (2007, 140).

### 1.3.3 Dispositionalism: Dualism

While the Pure Powers View has the advantage of meeting the earlier objections against Quidditism, Quidditism avoids the regress objections against the Pure Powers View. It might be wondered whether a view that combines elements of both views can adequately account for both sets of objections. One such view is Dualism, which maintains that some properties are qualitative or quiddistic, while others are essentially powerful. Chris Swoyer (1982), Brian Ellis (2001), and George Molnar (2003) have defended this view.

Dualism has some success against the objections against Quidditism. Since Dualism maintains that there are powers, it can be successful against the distinction-without-difference objection, provided some other conditions are met. Assuming that there are no causal or nomological “danglers,” then any two worlds with the same causal or nomological structures should be qualitatively identical. In a possible world  $w$ , a *non-dangler*  $Q$  is a quiddity or quality that exists in  $w$  and is included in the essence of some power  $P$  which also exists in  $w$ . By contrast, in a possible world  $w$ , a *dangler*  $Q$  is a quiddity or quality that exists in  $w$  but is *not* included in the essence of some power  $P$  which also exists in  $w$ . For any two worlds that contain non-danglers but no danglers, if they are structurally identical, then they should also be qualitatively identical. The quiddities in these worlds cannot be permuted or replaced without thereby changing which powers or nomological structures are instantiated in these worlds.

Where there are danglers, Dualism can still resist the distinction-without-difference objection, but only if there are qualities and no bare quiddities. Two structurally identical worlds that contain qualitative danglers may be really and qualitatively distinct because the danglers are qualitatively distinct. However, the objection holds if a proponent of Dualism affirms the possibility of bare quiddistic danglers. Two structurally identical worlds that contain bare quiddistic danglers, while really distinct, are not qualitatively distinct. Another “implausible plethora of distinct possible worlds” seems to follow once we allow the permutation or replacement of non-qualitative danglers.

On Dualism, the response to quiddistic skepticism and the argument from science go hand in hand. The proponents of Dualism typically maintain that there are at least some pure or ungrounded powers, viz., the properties of fundamental particles. This allows Dualism to account for the two objections to some extent: Dualism can maintain that the nomic structures of Ramseyan humility and the argument from science just are fundamental properties, viz., pure, ungrounded powers. At this point, there is no need go beyond these structures by positing hidden, quidditative extras. The task, then, for the proponent of Dualism is to justify the existence of qualities or quiddities, lest it collapse into the Pure Powers View. However, the view can be justified on the grounds that

positing quiddities can help stop the regress objections mentioned earlier, and by doing so, the view also avoids collapsing into the Pure Powers View.

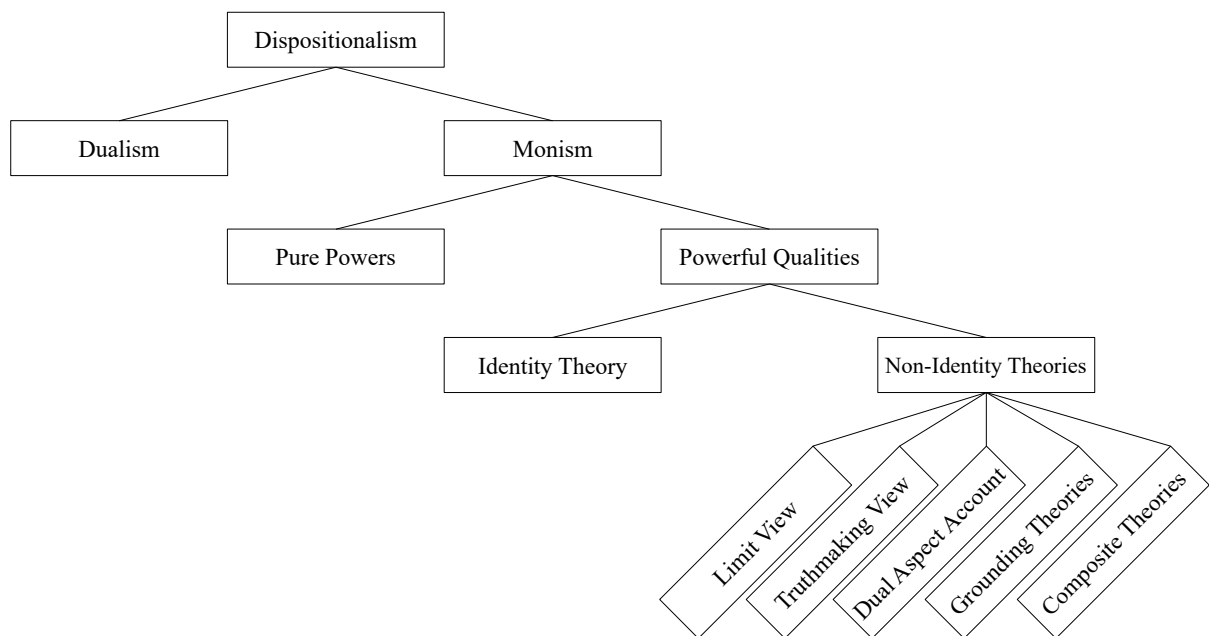
In contrast to the response to objections against Quidditism, the proponent of Dualism has a more straightforward approach in dealing with the regress objections against the Pure Powers View. Because the proponent of Dualism maintains that there are at least some quiddistic properties, all of the regresses can be stopped provided that all powers terminate in some quiddistic or qualitative property, either directly or by some chain of powers. A power  $P$  terminates in a quiddistic or qualitative property  $Q$  *directly* when its essence includes  $Q$  ( $Q$  is its manifestation). A power  $P$  terminates in a quiddistic or qualitative property  $Q$  *indirectly* when  $P$  includes another power  $R_i$  in its essence, and  $R_i$  includes in its essence either  $Q$  or some other power  $R_j$ , and so on and so forth until some power  $R_n$  which includes  $Q$  as its essence. This response, at least *prima facie*, should work against the epistemic, actuality, and individuation regresses.

Besides the challenges to Dualism in dealing with problems regarding Quidditism, there is also the more obvious objection that compared to Quidditism and the Pure Powers View, Dualism is less parsimonious. While Quidditism and the Pure Powers View maintain that fundamental properties are of one kind, Dualism maintains that there are two kinds.

#### 1.3.4 Dispositionalism: powerful qualities

Besides the Pure Powers View and Dualism, the third broad category of Dispositionalism is the Powerful Qualities View. According to this view, intrinsic properties are both qualitative and powerful. It branches out into two kinds: Identity Theory and Non-identity Theory, where Identity Theory is the main branch (see Figure 2). Identity Theory (Martin and Heil 1999; Heil 2003; Martin 2008; Strawson 2008) maintains a threefold identity: every intrinsic property  $P$  is identical to its qualitativity  $P_q$  and its dispositionality  $P_d$  (i.e., every property is identical to a quality and a power), and its qualitativity  $P_q$  and its dispositionality  $P_d$  are identical to each other (Heil 2003, 112).

On Non-identity Theory (Giannotti 2021; Martin 1996a, 1996b; Williams 2019; Azzano 2021; Coates 2021; Jacobs 2011; Taylor 2018; Tugby 2012), every property is both qualitative and powerful, but a property’s qualitativity and dispositionality are not identical to each other. On the Limit View (Martin 1996a; 1996b), a property’s qualitativity and dispositionality are identified as its aspects—or more precisely, as limits of acts and potency. The Truthmaking View (Jacobs 2011) and Grounding Theories (Azzano 2021; Coates 2021; Tugby 2012) identify properties with qualitative or otherwise intrinsic natures, which are dispositional insofar as they support truthmaking or grounding. On Composite Theories (Taylor 2018; William 2019), a property’s qualitativity and dispositionality are identified as a property’s parts. And the Dual Aspect Account (Giannotti 2021) is an attempt at identifying a Powerful Qualities View that involves ontologically negligible aspects.



**Figure 2: Types of Dispositionalism**

The supposed advantage of the Powerful Qualities View is that by including both qualities and powers into its ontology, it avoids the problems discussed earlier for both Quidditism and the Pure Powers View. Additionally, on Identity Theory, since a property just is a quality and just is a power, it remains parsimonious by positing only one kind of

property, in contrast to Dualism. Although all these advantages make the Powerful Qualities View sound promising, the present work will critically examine the feasibility of the view.

In chapter 2, I will discuss Martin and Heil's Identity Theory, which is the standard account of the Powerful Qualities View. I will also discuss Jacobs' Truthmaking View, which Jacobs takes to be a restatement of Identity Theory. In chapter 3, I will examine Strawson's case for powerful qualities, and attempt to undermine it. In chapter 4, I will discuss Giannotti's Dual Aspect Account of powerful qualities, which is supposed to be a Non-identity Theory of powerful qualities that promises to be ontologically lighter than Identity Theory. In chapter 5, I will discuss Taylor's collapse argument against the Powerful Qualities View. Taylor has argued that the Powerful Qualities View collapses into the Pure Powers View, and while I agree with him in important respects, I raise some doubts as to whether he is successful in establishing his case. In chapter 6, I examine a couple of Grounding Theories of powerful qualities, and attempt to show some of their deep conceptual issues. Finally, in chapter 7, I summarize key issues that Powerful Qualities Theorists should consider in further developing their accounts of powerful qualities, and suggest a certain direction for future research in powers.



## Chapter 2

### 2 Identity Theory and the Truthmaking View

In this chapter I will begin my examination of the Powerful Qualities View by discussing the standard account of powerful qualities: the Identity Theory of properties, defended by Charlie Martin and John Heil (Martin and Heil 1999; Heil 2003, 2005, 2012; Martin 2008). I will also discuss the Truthmaking View, defended by Jonathan Jacobs (2011), which is supposed to be a restatement of Identity Theory. Both views promise to be superior alternatives to both Categoricalism and Pure Powers Theory, but this is doubtful. On a simple reading of Identity Theory, the theory is in danger of incoherence, but a nuanced reading threatens to collapse into other views. As for the Truthmaking View, it too has trouble distinguishing itself, particularly from a certain form of Categoricalism.

In section 2.1, I discuss some of the historical background behind Identity Theory. A historically distant source of inspiration for Identity Theory is Locke's views on primary and secondary qualities, while Martin's (1993, 1996a, 1996b) Limit View is the direct predecessor of Identity Theory. In section 2.2, I discuss Identity Theory and Molnar's objection to it. In sections 2.3 and 2.4, I discuss and critique the simple and nuanced readings of Identity Theory, respectively. In section 2.5, I discuss the Truthmaking View, comparing it to Identity Theory, and drawing out some of its implicit assumptions. I then offer a critique of it in section 2.6. The chapter concludes in section 2.7.

#### 2.1 The History of Identity Theory

##### 2.1.1 Locke: primary and secondary qualities.

Insofar as he affirms that properties are powerful qualities, Heil sees himself "as a philosophical descendant of Locke (through Charlie Martin)" (Heil 2005, 351). For Heil, the historical counterpart to Identity Theory can be found in Locke's views on primary and secondary qualities.

For Locke, *primary qualities* are those qualities that are inseparable from matter. These include shape, size, extension, solidity, motion, and rest. While these are properties of the

objects that possess them, these qualities also produce corresponding ideas in us, ideas which resemble the qualities that produced them. For example, there is a copy of Locke's *Essay* resting on my desk that (when closed) is roughly a cuboid with dimensions of 8.5 x 5.5 x 1.5 inches. For Locke, the book (really a portion of matter) has the primary qualities of being cuboid in shape, having the aforementioned dimensions, and being at rest. Furthermore, the book produces in me an idea of an object with the aforementioned qualities, qualities which the book really does have.

*Secondary qualities*, on the other hand, are powers to produce sensations in us, such as colours, sounds, and tastes.<sup>8</sup> In contrast to primary qualities, secondary qualities are separable from matter. Matter can fail to possess secondary qualities, but never primary qualities. A grain of wheat, for example, can be continually divided until it becomes imperceptible, at which point, while it no longer has secondary qualities to produce in us sensations (say, of light yellow), it still possesses certain shape, size, extension, and so on (*Essay* II.viii.9). Furthermore, in contrast to primary qualities, the ideas that secondary qualities produce in us do not at all resemble the secondary qualities themselves. My copy of the *Essay*, by way of its secondary qualities, produces in me sensations of burgundy (the cover) and white (the pages), and of certain feels and sounds as I riffle through its pages. However, these sensations do not resemble the qualities of the book—the book itself is neither burgundy nor white, nor does it possess certain feels or sounds. Rather, what the book possesses are secondary qualities, powers that produce these sensations.

On a popular reading of Locke, the primary-secondary distinction is supposed to correspond to the categorical-dispositional distinction on this reading. Primary qualities are taken to be categorical properties, while secondary qualities are taken to be dispositional properties (see Heil 2003; Rockwood 2020). After all, some primary qualities, such as size and shape, are regarded as prime examples of categorical properties, and Locke explicitly identifies secondary qualities as powers. Heil, though, challenges the popular reading, suggesting instead that Locke held a view closer to

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<sup>8</sup> There is also another set of qualities, often called “tertiary qualities,” which are powers an object has to change the primary qualities of other objects, such as the power of a fire to melt a piece of wax (*Essay* 2.8.10).

Identity Theory (see Heil 2003, 79–81, 112–113; 2005, 352–53). In particular, Heil suggests that for Locke, both primary and secondary qualities are qualitative and powerful. As for primary qualities, while they are indeed qualities, they are nonetheless powerful, since “All these qualities make a difference to what their possessors could and could not do and what could and could not be done to their possessors” (Heil 2005, 346). Indeed, Locke thinks that primary qualities can produce in us corresponding ideas (*Essay* II.viii.9). A ball, for example, by way of its being (roughly) spherical, can produce in us the idea of being spherical. To be sure, primary qualities are not limited to the production of ideas that resemble them. Nonetheless, it is by way of its being spherical that a ball is also disposed to roll, make a round impression in a lump of clay, and so on. As for secondary qualities, Heil thinks that for Locke, secondary qualities are not only powerful, but also qualitative insofar as they are not distinct from primary qualities. On his reading of Locke, “secondary qualities are not properties objects possess alongside, or in addition to, their primary qualities” (Heil 2005, 353). Indeed, according to Heil, secondary qualities are arrangements of primary qualities. He writes:

Secondary qualities are not distinct from primary qualities: an object’s possession of a given secondary quality is a matter of its possession of a certain complex primary quality. In virtue of possessing this complex quality, the object would—is disposed to—look, feel, taste, smell, sound a certain way to an observer. (Heil 2005, 353)

To be sure, on this reading, while reference to their effects on observers helps to pick out secondary qualities, the secondary qualities themselves are in the objects themselves, independent of any mind.

Now, whether Locke actually held the view just outlined is up for debate (Heil thinks so), and I will not attempt to argue for or against this in the present work. It is enough to note Locke as a historical counterpart to Identity Theory.

### 2.1.2 Martin: the Limit View

Prior to Identity Theory, Martin (1996a, 1996b) proposed a theory of powerful qualities that he called the *Limit View*. On this view, every property lies between two unrealizable

limits of pure act (qualitativity) and pure potency (dispositionality).<sup>9</sup> To speak of a qualitative property is “to take some real property as *only* at its bare potency-free purely qualitative limit, which, of course, it never is” (Martin 1996a, 74), or “to take some real property as *at* the limit of *only* its bare potency-free act of being” (Martin 1996b, 132). To speak of a dispositional property is “to take some real property as *only* at its purely dispositional non-qualitative limit” (Martin 1996a, 74), where this limit includes “*only* its capacities and dispositions” (Martin 1996b, 132).

On the Limit View, there are no pure qualities or pure powers. Rather, every property is both qualitative and powerful, where neither a property’s qualitativity nor its dispositionality are reducible to the other. While qualitativity and dispositionality are inseparable, they are nonetheless distinct, since one can vary independently of the other. Martin compares this to the property of extension, where its shape and size can vary independently of the other, even though they are inseparable. Still, there are some cases where qualitativity and dispositionality covary, much like relationship between equilaterality and equiangularity (Martin 1996b, 133–4).

While the Limit View is the direct predecessor to Identity Theory, the two theories differ from one another in a crucial way. To be sure, both theories affirm that every property is both qualitative and dispositional. Qualitativity and dispositionality, on both views, are inseparable. The key difference, though, is that on Identity Theory, a property’s qualitativity is identical to its dispositionality. Their identity not only explains their inseparability, but their necessary covariance as well. By contrast, as we have seen, the Limit View maintains the distinction between qualitativity and dispositionality, and the possible variance of one independently of the other.

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<sup>9</sup> However, “The Limit View should *not* suggest that there are ‘degrees’ of dispositionality or qualitativity of some real property” (Martin 1996b, 132).

## 2.2 Martin and Heil: Identity Theory

*Identity Theory* maintains that every intrinsic property is both qualitative<sup>10</sup> and powerful, and that its qualitativity is identical to its dispositionality. Heil formulates the theory as follows:

If  $P$  is an intrinsic property of a concrete object,  $P$  is simultaneously dispositional and qualitative;  $P$ 's dispositionality and qualitativity are not aspects or properties of  $P$ ;  $P$ 's dispositionality,  $P_d$ , is  $P$ 's qualitativity,  $P_q$ , and each of these is  $P$ :  $P_d = P_q = P$ . (Heil 2003, 111)

Identity Theory not only makes the claim that every intrinsic property is both powerful and qualitative (this is true of any Powerful Qualities View), but it makes the stronger claim that the qualitativity and dispositionality of a property are identical to each other, and are indeed identical to the property itself. I will call this the *threefold identity condition*, or more simply the *identity condition*.

On Identity Theory, a property's qualitativity (i.e., its being a quality), roughly, has to do with what a property bearer is like. One can think of qualitative properties as pertaining to the "occurrent makeup" of the objects that possess them (cf. Giannotti 2021). As for a property's dispositionality (i.e., its being a power), it has to do with what a property bearer can do. It is in virtue of dispositional (or powerful) properties that an object could or would behave in certain ways under certain circumstances.<sup>11</sup> To illustrate how a property can be both qualitative and powerful in just these ways, Heil uses the example of being spherical. Being spherical is a clear example of a qualitative property. Any object with this property has a certain shape, such that its centre is equidistant from all points of its surface. However, being spherical is also powerful, since "it is in virtue of being spherical that an object rolls or would roll . . . makes or would make a concave impression in a lump of clay . . . reflects or would reflect light in a particular way," and so on (Heil 2005, 346).

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<sup>10</sup> Proponents of this view prefer to talk in terms of qualitativity and qualitative properties, instead of categoricity and categorical properties. For them and other Dispositionalists, dispositions are just as real (and hence, categorical) as any other property.

<sup>11</sup> Lockean primary qualities (e.g., shape, size) count as qualitative properties, whereas secondary and tertiary qualities correspond to dispositional properties.

To illustrate how a property's qualitativity can be *identical* to its dispositionality, Martin and Heil compare properties to ambiguous images, such as a rabbit-duck, a Rubin vase, or a Necker cube. In the case of the rabbit-duck, it is not an image composed of two parts: a rabbit and a duck. Instead, the *whole* image is viewed either as a rabbit, or as a duck. The same may be said of Rubin vases, Necker cubes, or other like image. In each case, the image is not a combination of multiple, perceptible images. Rather, each image is a unitary picture, and we can consider the *whole* picture one way or another. Powerful qualities are the same: the qualitativity of a property is the *whole* property considered one way, and the dispositionality is the very same property considered another way. To go back to the property of being spherical, its qualitativity (i.e., its particular shape) is just the property of being spherical considered one way. Likewise, its dispositionality (i.e., its enabling an object to roll, to make spherical impressions in clay, to reflect light in a certain way, etc.) is the property of being spherical considered another way. And the qualitativity and dispositionality of being spherical are each identical to the property itself, and hence, to one another.

### 2.2.1 Molnar's objection

While the comparison to ambiguous drawings has been the analogy of choice for Martin and Heil, the analogy makes it easy to interpret Identity Theory in a way that reduces qualitativity and dispositionality to mind-dependent concepts. Indeed, this is how Molnar has interpreted the theory:

If being a power is fully analogous to being a goblet drawing, then powers are not mind-independent, intrinsic properties of their bearers, but mind-dependent and relational properties. . . . [Identity Theory] loses OBJECTIVITY, and INTRINSICALITY, because according to it whether an object has powers and qualities depends in part on the considerings that happen (on what we see things as). The analysis in terms of 'seeing as' makes concepts like that of the faces drawing, or the goblet drawing, or the duck drawing, or the rabbit drawing, *response-dependent* concepts. When such an analysis is applied to dispositionality, it too becomes a response-dependent concept.<sup>12</sup> (Molnar 2003, 155–6)

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<sup>12</sup> By contrast, Molnar notes that the earlier Limit View avoids this objection, since on this theory dispositionality and qualitativity are objective sides or parts of a property.

While Molnar is mainly concerned here about dispositionality, his objection just as easily applies to qualitativity. Just as a rabbit-duck picture appears to be either a rabbit or duck by means of seeing or considering it as such, a property might be seen as either a quality or a disposition by a similar mental act. And the act of seeing one and the same property as either a quality or power suggests that on Identity Theory, qualitativity and dispositionality are mind-dependent concepts rather than objective features of things in the world.

To be sure, contrary to Molnar's interpretation, Martin and Heil want to maintain the existence of intrinsic, objective qualities and powers. Nonetheless, Molnar's objection does highlight the need to clarify and specify the nature of properties on Identity Theory. While the analogy to ambiguous drawings is suggestive, the Identity Theorist need only identify qualitativity and dispositionality as intrinsic, objective features of properties to which the relevant concepts correspond.<sup>13</sup> By specifying the nature of properties and explaining how every property is indeed intrinsically and objectively qualitative and powerful, the Identity Theorist can meet Molnar's objection. However, upon further examination into the nature of properties, it is doubtful that Identity Theory is a feasible theory. In the proceeding, I will examine two readings of Identity Theory—one simple, one nuanced. The result is that while both readings can satisfy Molnar's objection, Identity Theory is then faced with further significant problems.

### 2.3 Identity Theory: Simple Reading

On the face of it, Identity Theory seems to affirm the thesis that a property just is both a quality and a power, and that a property's qualitativity (i.e., its being a quality) is the same as dispositionality (i.e., its being a power). I will call this the *simple reading* of Identity Theory. Now, if every property really is both a quality and power, then concepts of qualitativity and dispositionality are not merely mind-dependent concepts, but have a counterpart in the world—namely, the qualitativity and dispositionality of properties.

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<sup>13</sup> Jacobs (2011) suggests that to avoid Molnar's interpretation, it is better to think of the identity of the qualitative and dispositional as an *a posteriori* identity (e.g., like that of Hesperus and Phosphorus). However, in order to support this approach, Jacobs offers a theory of powerful qualities that diverges significantly from Identity Theory (see below).

However, to some philosophers, Identity Theory sounds incoherent right at the outset. Indeed, the theory is incoherent if qualitativity and dispositionality are taken to be mutually exclusive. Molnar (2003), for example, divides properties into powers and non-powers. Place (1997) divides properties into modal properties (powers) and non-modal properties (qualities). And some might think that qualities are intrinsic properties, while powers are extrinsic (e.g., as relations, as supervenient entities, or as dependent on laws). Any theory that affirms that every property is both qualitative and powerful in any of these aforementioned ways (while denying that qualitativity and dispositionality are distinct parts or aspects of a property) is bound to be incoherent.

Martin and Heil, though, obviously do not think that qualitativity and dispositionality are mutually exclusive.<sup>14</sup> However, neither author appears to give an explicit definition of either notion. Still, to a rough approximation, on Identity Theory, qualitativity has to do with what an object is like, and dispositionality has to do with what an object can or would do in certain circumstances. Characterized as such, qualitativity and dispositionality are not mutually exclusive (at least not explicitly).<sup>15</sup> However, even with such a characterization, the simple reading of Identity Theory runs into trouble with asymmetries regarding qualitativity and dispositionality. By an “asymmetry,” I mean something true of qualities but not powers, and vice versa. And there are asymmetries between what an object is like (qualitativity) and what it can do (dispositionality). In particular, there is an explanatory asymmetry and an identity asymmetry between qualitativity and dispositionality. If qualitativity and dispositionality were identical to each other, as Identity Theory affirms, then these asymmetries should not hold. However, the plausibility of these asymmetries threatens the plausibility and coherence of Identity Theory.

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<sup>14</sup> On the Limit View, Martin had characterized properties as both in act and potency, but this kind of characterization does not work for Identity Theory. A property cannot be both wholly in act and wholly in potency, where as on Identity Theory, a property is both wholly qualitative and wholly dispositional.

<sup>15</sup> One might be tempted to think that this characterization is a modal/non-modal distinction, since dispositionality, but not qualitativity, involves what an object could or would do. The Identity Theorist, though, would maintain that qualitativity does have modal implications, even if the above characterization is not explicitly modal. (Similarly, a Property Dualist like Molnar thinks that even non-powers have causal relevance; see Molnar 2003, 162–65). However, another worry is that if dispositionality and qualitativity are defined as above, then Identity Theory might collapse into the Pure Powers View (see Taylor 2018).



### 2.3.1 Explanatory asymmetry

Consider a quality and a power that are supposed to be identical to each other according to an Identity Theorist, such as being spherical and the ability to roll.<sup>16</sup> There seems to be an explanatory relation that holds between these two, where the former explains the latter. Heil himself admits this: “it is in virtue of being spherical that an object rolls or would roll” (Heil 2005, 346). At this point, there might already be a problem for an Identity Theorist depending on his views of explanation. If the type of explanation involved is irreflexive, then if a quality explains the power it is allegedly identical to, then they are not identical. This is the case if the explanation involved is, say, grounding (where the standard account of grounding involves irreflexivity). But even if an Identity Theorist might be okay with reflexive explanation, the explanatory relation between a quality and the power to which it is allegedly identical seems to hold only one way. If they were identical, explanation should go both ways. However, as in the case of being spherical and the power to roll, the explanatory relation does not go both ways. An object’s being spherical explains why it can roll, but its ability to roll does not explain why it is spherical.

How can an Identity Theorist respond to this? For one, the Identity Theorist can deny that any explanatory relation exists between a quality and a power that are supposed to be identical to each other. However, such a response runs contrary to the way that Identity Theorists like Heil talk about qualities and powers. Again, he says that “it is in virtue of being spherical that an object rolls or would roll” (Heil 2005, 346). Also, it is very plausible that an object’s qualities really do explain its possession of certain dispositions. Consider a wooden cube, for example, and note that as it is, it is not capable of rolling, say, if it were placed at the top of a slope. Take the same cube, though, and carve it into a ball. The now wooden ball now has the ability to roll down the slope. What explains the fact that the object now has this ability? The answer is its shape: the object now being spherical has the power to roll in virtue of its being spherical.

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<sup>16</sup> To be sure, an Identity Theorist might think that being spherical is identical not only to the power to roll, but to the whole set of powers associated without being spherical, such as the power to make a concave impression in a lump of clay, the power to reflect light in a certain way so as to appear spherical, and so on (Heil 2005, 346). For simplicity, though, I will consider just the ability to roll.

A second response is for the Identity Theorist to insist that the explanatory relation really is symmetrical between qualitativity and dispositionality. For instance, not only does an object's being spherical explain its ability to roll, but an object's ability to roll also explains its being spherical. On this response, an Identity Theorist, assuming reflexive explanation, need not deny the identity of qualitativity and dispositionality on account of an explanatory asymmetry. However, despite such insistence, symmetrical explanation still seems implausible. Consider again the example of the wooden cube turned into a ball. How do we explain the now spherical shape of the ball? To say that the ball is spherical in virtue of its being able to roll is an implausible explanation (the reverse seems much more plausible). A causal explanation, by contrast, of how the chunk of wood became spherical is a plausible explanation.<sup>17</sup> To be sure, a causal explanation might involve the powers of the tools used to shape the wood, or of the wood itself to be shaped. However, the powers allegedly identical to being spherical, such as the ability to roll, are not a part of this explanation—how could it, if, being identical to the spherical shape, is the product and not the cause?

### 2.3.2 Identity asymmetry

It is common to think that dispositions are individuated on the basis of their causal or nomic roles. This can be thought of in terms of a disposition's relations to other properties, namely, its stimulus conditions (if there be any) and manifestation(s). Alternatively, if dispositions are essentially intentional, where intentionality is not a relation (Martin and Heil hold this view; see also Molnar 2003), then we can say that every disposition is individuated by way of their "pointing" to other properties. Whether described in terms of relations or intentionality, the individuation of dispositions is derivative. By contrast, qualities are not individuated in relation to stimulus conditions or manifestations, but primitively or otherwise (see Azzano 2020). A property that is individuated primitively just is the property that it is and not another—there is nothing further about the property that gives it its identity. A qualitative property that is non-

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<sup>17</sup> This is not to deny that there are other sorts of acceptable explanations for the wooden ball's being spherical. Why is it a sphere? You can say that it is because the chunk of wood is such that its centre is equidistant from all points on its surface. Or perhaps you, a sculptor, wanted to practice making spherical objects. The point, though, is that citing the powers to which being spherical is allegedly identical does not seem to offer an acceptable explanation of the object's being spherical.

primitively individuated might be individuated on the basis of qualitative character<sup>18</sup> (e.g., mental *qualia*) or by the properties and relations constitutive of it (e.g., shape properties).

That powers and qualities are individuated in different ways casts doubt on the coherence of Identity Theory. This is not to say that properties cannot be individuated on both the bases of qualitativity and dispositionality. Williams (2019), for example, thinks that properties are individuated both ways. However, Williams also maintains that a property is constituted by qualitative and dispositional parts, and that it is doubly individuated on the basis of both parts (each part is individually sufficient to individuate the property). The problem, though, for Identity Theory is that it identifies a property's qualitativity with its dispositionality, and so where property identity is concerned, the theory risks incoherence. Dispositionality involves derivative individuation, whereas qualitativity may involve non-derivative individuation. Even where a quality is individuated in relation to other properties, there is a marked difference. The properties by which powers are individuated are specifically stimulus conditions and manifestations, and given that a power can exist unmanifested, when a power is instantiated, its stimulus and manifestations might not be (e.g., a chunk of iron might be prevented from oxidizing). By contrast, when a quality, such as a shape property (e.g., being conical), is instantiated, its constituent properties and relations must also be instantiated (e.g., having a flat circular base, having a curved surface, and so on).

In light of the explanatory and identity symmetries, it is difficult to see how Identity Theory is a viable theory. It appears to be too strong in what it requires. To be sure, there is some plausibility to the idea that one and the same property can be both qualitative and powerful. The problem is the identity condition, which requires that a property's qualitativity be identical to its dispositionality. It is because of this condition that Identity Theory has trouble accounting for the explanatory and identity asymmetries.

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<sup>18</sup> Smith (2016) thinks that, where properties do not merely have but *are* qualities, individuation by qualitative character is a type of primitive individuation. Others might be inclined to think that primitive individuation involves nothing other than a primitive this-ness, so as to exclude qualitative character as a principle of individuation, even if such qualitative character is unanalyzable.

## 2.4 Identity Theory: Nuanced Reading

Besides the simple reading, Heil has made remarks that suggest another reading of Identity Theory. He writes:

it is convenient, although potentially misleading, to describe properties as powers, or as qualities, or as both powers and qualities. Rather, properties are taken to contribute in distinctive ways to the dispositionality and qualities of their possessors. The dispositionality and qualities possessed by a given object depend on its ensemble of properties. A key of a certain size and shape will open a lock, but only if it is sufficiently rigid; a ball made of soft dough at room temperature will not roll. (Heil 2003, 112)

Given this description, Identity Theory maintains not that properties *are* qualities and powers, but rather that they *contribute* qualities and powers to the objects that possess them. This description seems to suggest that a property is some underlying thing that is somehow distinct from the qualities and powers that it contributes. I will call this the *nuanced reading* of Identity Theory. On this reading, we can think of the qualitativity of a property as whatever it is about the property that contributes qualities, and *mutatis mutandis* for dispositionality.

Now, there are several advantages to the nuanced reading. Firstly, like the simple reading, it promises some objective basis for the concepts of qualitativity and dispositionality. There is something about a property itself that corresponds to the concepts, and which supports our use of them. Secondly, defined in terms of contributing qualities and powers, qualitativity and dispositionality are not mutually exclusive. This makes it possible for the identity condition of Identity Theory to be met. Thirdly, if qualitativity and dispositionality are distinguished from the qualities and powers that they contribute, Identity Theory can accommodate both asymmetries.

As for the explanatory asymmetry, an Identity Theorist can maintain that a quality explains the powers associated with it, while also maintaining that the property's qualitativity (whatever it is about the property that contributes the quality) is identical to its dispositionality (whatever it is about the property that contributes the powers). One can maintain that properties contribute qualities, and that they contribute powers by virtue of the qualities they contribute. The property of sphericity, for example, contributes

a certain quality (being spherical), by virtue of which it contributes certain powers (the disposition to roll, and so on), but strictly speaking, it is neither the quality nor the powers.

As for the identity asymmetry, an Identity Theorist can maintain that qualities and powers are individuated differently from each other, but a property's qualitativity and dispositionality, which are supposed to be identical to each other, are individuated by some other means (perhaps by the total set of qualities and powers that they contribute). Again, consider sphericity. The quality it contributes (being spherical) is individuated one way (not in relation to stimuli or manifestations), while the powers it contributes (the disposition to roll, and so on) are individuated another way (in relation to stimuli and/or manifestations). However, what makes sphericity the property it is is the totality of the qualities and properties that it contributes.

Now, despite its advantages, the nuanced reading of Identity Theory is deeply problematic, and for the very same reason that it has the advantages that it does: namely, it distinguishes properties from the qualities and powers that they contribute. Because the nuanced reading does this, it is an unstable view. Firstly, if we assume that qualities and powers are not properties in their own right, then the nuanced reading of Identity Theory comes very close to (if it does not outright collapse into) neutral Monism, the view that maintains an agnosticism with respect to the true nature of a property. On the nuanced reading, not much can be said positively about a property except in relation to the qualities and powers it contributes: a property is something that an object possesses in virtue of which the object also possesses certain qualities and powers. Compare this with qualities, which have character, and with powers, which support causation—these have a richness in nature that properties in themselves seem to lack. Also, if properties are not identical to qualities or powers, then our access to properties is less direct than even our access to the qualities and powers with which we are more familiar (whether directly or indirectly). While the nuanced reading promises an objective basis for concepts of qualities and powers, and while it accommodates the asymmetries, it is at the cost of clarity and specificity with regard to the nature of properties.

Secondly, if qualities and powers are properties in their own right, then the nuanced reading collapses into the simple reading of Identity Theory, Dualism, or even trialism. As mentioned already, qualities and powers have rich natures. On top of that, they are possessed by particular objects (or they are ways that objects exist), they are predicable of objects, and they are repeatable (the same quality or power can be possessed by different objects at any given time). These features suggest that they should be considered properties in their own right, and not just contributions made by an underlying property.<sup>19</sup> But if qualities and powers are properties in their own right, what should be done with the underlying contributive properties? Well, if they are kept in the theory, the result is a trialism, the view that there are three kinds of properties—in this case, qualities, powers, and underlying properties. This is quite the undesirable result for Identity Theory, which is supposed to be a monistic theory. In light of this possibility, it might be better to cut out the underlying properties altogether. Given that they are rather mysterious and all they seem to do is contribute qualities and powers, underlying properties appear to be unnecessary ontological baggage. Now, without these properties, there are two options: either Dualism or the simple reading of Identity Theory. The Identity Theorist, however, prefers Monism over Dualism, but the simple reading is vulnerable to the explanatory and identity asymmetries.

## 2.5 Jacobs: The Truthmaking View

Jacobs (2011) is sympathetic to Identity Theory, but in light of Molnar's objection (that qualitativity and dispositionality are mind-dependent concepts), he suggests that Martin and Heil's analogy of ambiguous drawings should be dropped. Instead, he thinks that the identity of qualitativity and dispositionality should be compared to other *a posteriori* identities (e.g., Hesperus and Phosphorus). In order to make Identity Theory analogous to *a posteriori* identities, "it needs to distinguish the dispositional or powerful from the qualitative in such a way that, though we can imagine that they might have been distinct,

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<sup>19</sup> Heil denies that powers are multiply realizable, higher-order properties, somehow grounded or realized by lower-level (categorical) properties (see Heil 2003, 32–34; 2005, 346–50; 2008). In the current context, he would probably also deny that qualities are multiply realizable, higher-order properties. However, my objection does not require that either powers or qualities be multiply realizable, although it might require them to be high-order properties. Still, unless they are higher-order qualities, it is not clear what exactly it is that properties contribute.

they are in fact identical” (Jacobs 2011, 90). To this end, he develops his own version of the Powerful Qualities View that relies on the truthmaking relation. While Jacobs considers his view to be “a *restatement* of the identity view of Martin and Heil, in a manner that avoids common misunderstandings” (2011, 92), it is less of a reiteration, and more of a reinterpretation of Identity Theory. The resulting view differs significantly from Martin and Heil’s Identity Theory, and while it has advantages over its predecessor, it has important disadvantages as well.

Jacobs calls his theory the *Truthmaking View*, because of its reliance on the truthmaking relation. This view, like Identity Theory, maintains that every intrinsic property is both qualitative and powerful, without requiring that qualitativity and dispositionality be distinct aspects or parts. On the Truthmaking View, “To be qualitative is to be identical with a thick quiddity” (Jacobs 2011, 90).<sup>20</sup> To be a property, then, is to be a thick quiddity, and to be a thick quiddity is to be a qualitative character (*quale*).<sup>20</sup> Properties do not merely possess qualitative characters, but rather *are* qualitative characters. As such, they are the sort of thing with which “the phenomenologically minded may think . . . we have a direct acquaintance . . .” (Armstrong 1997, 169; as quoted in Jacobs 2011, 91).<sup>21</sup>

As for being powerful, “To be powerful . . . is to be a nature sufficient to be (part of) the truthmaker for certain counterfactuals” (Jacobs 2011, 91). This requires some explanation. Firstly, the counterfactuals involved here are modal, causal, or nomic in nature. They indicate what objects with certain properties would do under certain circumstances. For example, where *P* is a property, and *o* is an object that possesses *P*, “if *o* were in circumstance *c*, then *o* would bring about  $\varphi$ ” (Jacobs 2011, 91). Jacobs notes, as well, that such a counterfactual can serve as a law, such as “objects with *P* in *c* would bring about  $\varphi$ ” (Jacobs 2011, 92).<sup>22</sup>

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<sup>20</sup> Although he thinks of properties as *qualia*, Jacobs distinguishes between mental and physical *qualia*, so as not to be committed to panpsychism (Jacobs 2011, 91).

<sup>21</sup> This epistemic way of characterizing thick quiddities might be inadequate. Three-dimensional shape properties are exemplary qualities, yet it seems that we are not directly acquainted with them. Rather, a three-dimensional shape property is known to us (as a three-dimensional shape property) only from the systemic variation of its appearance from many points of view. Thanks to Robert DiSalle for this point.

<sup>22</sup> In the present work, where Jacobs’ Truthmaking View is involved, I will refer to these modal/causal/nomic counterfactuals simply as “causal counterfactuals.”

Secondly, Jacobs makes the following assumptions about truthmaking. He assumes that truth is determined by reality, and that truthmaking is a basic relation that typically relates objects to truth bearers. He also thinks that this relation is a many-many relation, meaning that one entity can make multiple truths true, and that one truth can have multiple truthmakers. Jacobs also assumes a limited form of truthmaker maximalism, according to which there is a truthmaker for every truth about concrete objects and their properties. Most importantly, though, for the Truthmaking View, Jacobs assumes that the truthmaking relation is an *internal* relation. That is, it is “determined by the nature of the *relata*: if *e* is a truthmaker for *t*, then in any world in which both *e* and *t* exist, *e* is a truthmaker for *t*” (Jacobs 2011, 82).

Thirdly, the Truthmaking View requires that for a property to be powerful, it must be a nature *sufficient* to be *part of* a truthmaker of causal counterfactuals. It does not require a property to actually be a truthmaker, only that it be of a nature sufficient to be part of a truthmaker. The theory does not require truth bearers to be necessary entities (they might be contingent), and properties need only be part of a truthmaker since causal counterfactuals require a varying number of properties to make them true. If a causal counterfactual needs only one property to make it true, then that property is the sole truthmaker for it. If a causal counterfactual requires more than one property, then each individual property is only a part of the truthmaker.

With Jacobs’ definitions for being qualitative and being powerful in mind, how is it that the same property can be both qualitative and powerful? Jacobs writes:

The only answer to the question, “Why is this quality, this thick quiddity, sufficient to make true this counterfactual?” is that the thick quiddity is the thick quiddity that it is (and not some other),<sup>23</sup> and that the counterfactual is the counterfactual that it is (and not some other). Truthmaking, after all, is an internal relation. (Jacobs 2011, 92)

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<sup>23</sup> I am not sure if the qualification, “and not some other,” should be included given that Jacobs assumes that truthmaking is a many-many relation: one entity can make many truths true, and one truth can have many truthmakers. It is possible that a counterfactual, if coarse-grained enough in description (and the counterfactual mentioned in the main body of text might well be coarse-grained enough), can be made true by different kinds of properties, say, *P* and *Q*. Thus, while it can be said that *P* makes the counterfactual true because of the thick quiddity that it is, the qualification “and not some other” cannot be affirmed, since *Q* also can make the counterfactual true. None of this detracts from Jacobs’ main point, but it is worth mentioning given what Jacobs assumes about truthmaking.



On the Truthmaking View, then, a property is both qualitative and powerful because it is a thick quiddity. Insofar as it is a thick quiddity, it is qualitative. In virtue of being the thick quiddity that it is, a property is also a nature sufficient to be (part of) a truthmaker for certain causal counterfactuals. Hence, on the Truthmaking View, the very same property is both a quality and a power.

### 2.5.1 Truthmaking View versus Identity Theory

While both the Truthmaking View and Identity Theory affirm that the very same property can be both qualitative and powerful, without requiring that qualitativity and dispositionality be distinct aspects or parts, there are nonetheless important differences between the two theories.

Firstly, the two theories use different different notions of being qualitative and being powerful. On Identity Theory, qualitativity has to do with what a property bearer is like, or a property's contribution to the occurrent makeup of the property bearer (cf. Giannotti 2021). It can even be thought of as a property's being a primary quality in the Lockean sense. Again, Martin and Heil are not explicit in defining qualitativity, but this is an approximation of what they have in mind. On the Truthmaking View, for a property to be qualitative is for it to be a thick quiddity. These notions are not necessarily contrary, but the Truthmaking View is explicit in maintaining that properties are quiddistic, and hence, it maintains that they are individuated primitively or intrinsically.<sup>24</sup> Martin and Heil, by contrast, are not explicit about how properties are individuated.

As for a property's being powerful, on Identity Theory, this consists in what a property can or would do in certain circumstances, or a property's contribution of powers or dispositionality to the property bearer. On the Truthmaking View, being powerful consists in its being a nature sufficient to be part of a truthmaker for causal counterfactuals. As with the two notions of qualitativity, these notions of power are not necessarily contrary. Martin, for example, argued for "the need of a nonregularist

<sup>24</sup> While this is not an objection pursued in this chapter, it is worth noting that this part of the Truthmaking View is problematic. Every intrinsic property is supposed to be a thick quiddity, according to the view. However, if thick quiddities are supposed to be individuated intrinsically, then the Truthmaking View cannot account for certain properties (e.g., mass and charge), which are difficult to characterize independently of some law. Thanks again to Robert DiSalle for this point.

disposition power base as a truth-maker for strong conditionals and counterfactuals” (Martin 1993, 176). Indeed, the Identity Theorist (or any Dispositionalist, really) would affirm the need for powers as truthmakers for causal counterfactuals. However, for Jacobs, the criterion for being a power is weaker than Martin and Heil’s characterization of powers. Jacobs’ notion of being powerful is a semantic notion, requiring only that a property be of a nature sufficient to be part of the truthmaker for causal counterfactuals. Martin and Heil’s notion of being powerful is ontic, requiring that a property *per se* really enable an object to behave in certain ways. Dispositional Realists would agree that if a property is powerful in the ontic sense, then it is also powerful in the semantic sense. However, the semantic notion is weaker: a property can be powerful in the semantic sense, without also being powerful in an ontic sense. To illustrate the difference, consider Armstrongean Categoricalism. On this view properties are not powerful in the ontic sense because by themselves they are causally inert—a property has no necessary connection to other properties. However, Armstrongean properties are nonetheless powerful in the semantic sense with the help of laws of nature—a property is sufficient to be part of a truthmaker for causal counterfactuals, but laws are also required to make such counterfactuals true. As for the Truthmaking View, Jacobs is unclear as to whether properties are also powerful in the ontic sense (more on this below).

Secondly, besides differing with respect to the notions of being qualitative and being powerful, the Truthmaking View and Identity Theory differ with respect to the latter’s identity condition. For Identity Theory, a property is not only qualitative and powerful, but its qualitativity and dispositionality are also identical. However, on the Truthmaking View, while a property is both qualitative and powerful, its qualitativity and dispositionality are *not* identical. Jacobs does not directly discuss this, but I think it is a consequence of his theory. For Jacobs, a property’s qualitativity is its being a thick quiddity, and its dispositionality is its being a nature sufficient to be part of the truthmaker for causal counterfactuals. Now, on the Truthmaking View, why is a property sufficient to support such counterfactuals? It is because of the content of such counterfactuals and the nature of a property as a thick quiddity. In other words, a property’s dispositionality is explained in part by its qualitativity and in part by the content of causal counterfactuals. However, assuming that explanation is irreflexive, then

dispositionality is not identical to qualitativity. But even if explanation can be reflexive, while it is plausible that a property's being qualitative explains (in part) why it can support causal counterfactuals, it is dubious that its being able to support causal counterfactuals likewise explains its being qualitative. Thus, even if explanation can be reflexive, it is doubtful that on the Truthmaking View, a property's qualitativity is identical to its dispositionality.

Because of the differences in characterizing qualitativity and dispositionality, the Truthmaking View benefits from some advantages over Identity Theory. One advantage is that it is not in danger of Molnar's objection, nor does it threaten to collapse into neutral Monism. Jacobs foregoes the ambiguous drawing analogies altogether, and does not describe qualitativity and dispositionality in terms of seeing a whole property in different ways. Instead, by affirming that intrinsic properties are thick quiddities, and by maintaining dispositionality in terms of truthmaking and causal counterfactuals, the Truthmaking View provides a clear objective basis for qualitativity and dispositionality. Furthermore, in contrast to the nuanced reading of Identity Theory, it does not threaten to collapse into neutral Monism, since the theory explicitly maintains that properties are thick quiddities. The theory identifies properties as essentially qualities, and does not require a mysterious underlying property that contributes both qualities and powers.

The second advantage is that, in contrast to the simple reading of Identity Theory, the explanatory and identity asymmetries are not problems for the Truthmaking View. As for the explanatory symmetry, it is built into the theory: a property, on the Truthmaking View, is a quality, and its being a quality explains (at least in part) its being a power (i.e., a nature sufficient to be part of the truthmaker for causal counterfactuals). As for the identity asymmetry, it need not be a problem for the Truthmaking View. By identifying properties as thick quiddities, the Truthmaking View affirms that they are individuated intrinsically. However, the theory also involves a notion of power, albeit a weaker notion compared to other theories of powers. An ontic notion of power typically holds that powers are individuated by their connections to their stimuli and/or manifestations. Jacobs, though, is not clear on how powers should be individuated on a merely semantic notion of power. That being said, it seems that for Jacobs, for the Truthmaking View to

remain coherent, his notion of power does not pose restrictions on property identity. The Truthmaking View, then, avoids the identity asymmetry altogether, given that its notion of dispositionality does not require that properties be individuated in connection to stimuli and/or manifestations.

### 2.5.2 Multiple notions of dispositionality

As mentioned earlier, the Truthmaking View uses a semantic notion of dispositionality, which requires only that a property be sufficient for causal counterfactual support. However, it might be wondered whether properties, insofar as they are thick quiddities, are indeed sufficient. The kinds of counterfactuals that Jacobs has in mind include “if  $o$  were in circumstance  $c$ , then  $o$  would bring about  $\varphi$ ,” and “objects with  $P$  in  $c$  would bring about  $\varphi$ .” Such counterfactuals are causal in content, describing the behaviours of objects. We should expect, then, assuming that we are not also appealing to any laws, that at least one of the properties which constitute the truthmaker of a causal counterfactual to be causal in nature (i.e., powerful in the ontic sense of disposing property bearers toward certain behaviours). If thick quiddities are sufficient to support causal counterfactuals (again, without appealing to laws), then they must also be causal in nature. And Jacobs does think that they are indeed sufficient. Furthermore, on the Truthmaking View, it seems that thick quiddities are sufficient for counterfactual support *because* they dispose their possessors to certain behaviours by way of their qualitative natures. The result, then, is that not only are thick quiddities powerful in the semantic sense, but they are also powerful in the ontic sense. This seems to be implicit in the Truthmaking View, even if Jacobs does not quite make it explicit in these terms.<sup>25</sup>

Besides the reasons just discussed, the idea that thick quiddities dispose objects to certain behaviours by virtue of their qualitative natures is a generally plausible idea. What an object can do depends on what qualities it possesses, and differences in dispositions can be explained by differences in qualities. It is by virtue of being spherical (rather than, say, being cubical) that an object is disposed to roll. It is by virtue of its shape that a key can

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<sup>25</sup> Note also how Jacobs thinks that laws themselves are counterfactuals, such as “objects with  $P$  in  $c$  would bring about  $\varphi$ ” (Jacobs 2011, 92). This suggests that laws do not play a governing role on the Truthmaking View, so that leaves properties to do the causal and truthmaking work.

open some locks but not others. While this idea is affirmed by Identity Theory, it is affirmed by some versions of Categoricalism as well. On Moderately Austere Quidditism, for instance, it is in virtue of their qualitative natures that properties determine (at least in part) their dispositional profiles (see Smith 2016).

The Truthmaking View, then, implies not only that properties are powerful in the semantic sense, but in the ontic sense as well. Still, Jacobs emphasizes the semantic sense in characterizing dispositionality. Perhaps what he has in mind is that the semantic notion is the minimal criterion for being powerful: regardless of a property's nature, as long as it is sufficient to be part of the truthmaker for a causal counterfactual, then it is a powerful property. As we shall see, though, this is too minimal of a criterion.

## 2.6 Is the Truthmaking View Indistinguishable from Categoricalism?

On the Truthmaking View, dispositionality requires only that a nature be sufficient to be *part of* the truthmaker for causal counterfactuals. It does not require a property to be sufficient to be the whole truthmaker.<sup>26</sup> Furthermore, dispositionality on the Truthmaking View does not impose restrictions on property identity. Because of these features of dispositionality, the Truthmaking View fails to distinguish itself from a certain form of Categoricalism, which I will call *Lawful Qualitative Quidditism*. On this form of Categoricalism, properties are thick quiddities, and they support causal counterfactuals by way of truthmaking, which is assumed to be an internal relation. Furthermore, because properties are thick quiddities, they determine (at least in part) the dispositional profiles of their bearers in virtue of their qualitative natures, and are thus sufficient to support some causal counterfactuals. However, other causal counterfactuals, on this view, require the addition of laws, construed as real principles external to the properties that they govern, since thick quiddities are not sufficient to explain every kind of behaviour.<sup>27</sup>

<sup>26</sup> Otherwise, perhaps the only legitimate powers would be the spontaneously manifesting ones.

<sup>27</sup> For the purposes of argument I have identified *Lawful Qualitative Quidditism*, but it is not clear whether anyone has defended such a view. In formulating it, I have drawn upon Smith's (2016) Moderately Austere Quidditism, which identifies properties as qualitative (thick) quiddities, which determine (at least in part) their dispositional profiles in virtue of their qualitative natures. The difference is that Smith does not specify what laws are on the theory, nor does she discuss truthmaking, let alone counterfactual support. To avoid attributing to her a view she might not hold, I identified

Now, consider the following counterfactual: “if  $o$  were in circumstance  $c$ , then  $o$  would bring about  $\varphi$ .” As far as properties are concerned, the Truthmaking View maintains that only properties are required to make causal counterfactuals true. In this case, perhaps only one property,  $P$ , is enough to make the counterfactual true. However, on Lawful Qualitative Quidditism, at least in some cases, properties are not sufficient and require the help of laws to make the counterfactual true. In such cases, the Lawful Qualitative Quidditist might contend that not only is  $P$  required to make the counterfactual true, but also some law of nature, such as  $N(P, \varphi)$ . Either way, for both the proponent of the Truthmaking View and the Lawful Qualitative Quidditist,  $P$  is part of the truthmaker for the counterfactual, even if the Categoricalist requires more to make the counterfactual true. Thus, given the Truthmaking View’s account of dispositionality, properties are powerful both on the Truthmaking View and Lawful Qualitative Quidditism. And since they both affirm that properties are thick quiddities, the outcome is that the Truthmaking View fails to distinguish itself from a type of Categoricalism. This is an unwelcome result since one of the motivations for the development of the Powerful Qualities View is to have a genuine alternative to both Pure Powers Theory and Categoricalism.

How, then, should the Truthmaking View distinguish itself from Lawful Qualitative Quidditism? The problem with the view is that its notion of dispositionality is too weak, so perhaps it should require a stronger ontic notion. One such notion has already been mentioned: an ontic notion of dispositionality which requires that a property dispose its bearer toward certain behaviours. As discussed earlier, Jacobs seems to already assume this about thick quiddities, but here the idea is to use it as the mark of dispositionality, rather than the weaker semantic notion. However, even this stronger ontic notion is not strong enough. Lawful Qualitative Quidditism affirms that properties are thick quiddities, and that simply in virtue of their qualitative natures, they dispose objects toward certain behaviours. Thus, even with the stronger notion of dispositionality, properties are counted as powerful on Lawful Qualitative Quidditism.

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Lawful Qualitative Quidditism instead. However, the nomological and truthmaking aspects of the view nonetheless have precedent in another Categoricalist ontology. For these aspects of Lawful Qualitative Quidditism, I borrowed from Armstrong who not only affirmed the existence of real laws as external governing principles, but also affirmed truthmaking as an internal relation (see Armstrong 2004). The result, then, is a possible view, even if it has no known defenders.

There is, however, another ontic notion of dispositionality, which requires that a property have its identity determined in connection to stimuli and/or manifestations. If the Truthmaking View were to use this notion, it would successfully distinguish itself from Lawful Qualitative Quidditism. Since Lawful Qualitative Quidditism maintains that properties are thick quiddities, it also maintains that properties are individuated intrinsically, and not in connection to any stimuli and/or manifestations. However, this notion is also incompatible with the Truthmaking View itself, since it too maintains that properties are thick quiddities.

Instead of using a stronger notion of dispositionality, perhaps the Truthmaking View can be distinguished from Lawful Qualitative Quidditism simply by excluding laws of nature from its ontology. To be sure, Powers Theorists often accommodate laws of nature. They typically affirm that laws are real, but reduce them to something else within their ontology. A typical powers ontology will reduce laws to relations between powers, where such laws are constitutive of the identity of powers. On the Truthmaking View, laws are reduced to general counterfactuals, such as “objects with  $P$  in  $c$  would bring about  $\varphi$ ” (Jacobs 2011, 92). By contrast, while some forms of Categoricalism affirm the existence of real laws, they often take these laws to be external principles which govern properties, and which are neither reducible to counterfactuals, nor derivable from the relations between properties. Lawful Qualitative Quidditism is a Categoricalism of this kind. In light of this, one way to distinguish the Truthmaking View from Lawful Qualitative Quidditism is to exclude laws as external principles from its ontology. However, if Ioannidis, Livanios, and Psillos (2021) are correct, then laws, as external governing principles, are indispensable even on powers ontologies. Among other things, they argue that powers are insufficient to support conservation laws and asymmetries as these hold for closed systems, rather than supervening upon the essences of individual powers.<sup>28</sup>

## 2.7 Conclusion

In this chapter, I have examined Martin and Heil’s Identity Theory, the standard account of the Powerful Qualities View. Both simple and nuanced readings of the theory are

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<sup>28</sup> See chapter 7 for a more detailed summary.

problematic. The simple reading has difficulties accounting for asymmetries regarding the explanatory relations and identity conditions of qualitativity and dispositionality. The nuanced reading is unstable, in danger of collapsing into neutral Monism, Dualism, trialism, and even back into the simple reading. I also examined Jacobs' Truthmaking View, which is supposed to be a restatement of Identity Theory. The view, though, differs significantly from Identity Theory, yet benefits from several advantages over its predecessor. The Truthmaking View, for example, has no difficulty in accounting for the explanatory and identity asymmetries, nor is it in danger of the same kind of theory collapse as the nuanced reading of Identity Theory. Still, the Truthmaking View has difficulty distinguishing itself from at least one form of Categoricalism, namely, Lawful Qualitative Quidditism.



## Chapter 3

### 3 Strawson's Case for Identity Theory

Martin and Heil proposed Identity Theory as a middle view between Quidditism and the Pure Powers View, recommending it on the grounds that it benefits from the advantages of these other views, while avoiding their major flaws. Strawson (2008), on the other hand, has defended a version of Identity Theory with an argument from inseparability. His argument can be formulated as follows:

- (1) For any  $x$  and  $y$ ,  $x$  and  $y$  are inseparable just in case  $x$  and  $y$  are identical.  
(premise)
- (2) Categorical being and dispositional being are inseparable.<sup>29</sup> (premise)
- $\therefore$  (3) Categorical being and dispositional being are identical. (from 2, 4)<sup>30</sup>

The aim of this chapter will be to show that Strawson fails to establish both premises of his argument. In section 3.1, I will discuss why premise 1 is false. While the claim that identity entails inseparability is uncontroversial, the converse does not hold, at least in the case of properties. I will try to show this by an argument from the determinable-determinate distinction. In section 3.2, I will discuss why Strawson's defence of premise 2 is unsuccessful. He argues for this premise by defending the thesis that categorical and dispositional being mutually determine each other. I will argue why his defence of this thesis fails, but more importantly, I will discuss why the thesis does not even entail premise 2. To be sure, Strawson does support premise 2 by providing an argument against ungrounded powers, but I will also try to show why even this part of his argument is inadequate.

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<sup>29</sup> Strawson mainly uses the terms "categorical being" and "dispositional being," which I will take to be interchangeable with "qualitativity" and "dispositionality," respectively. In this chapter, I will mainly "categorical being" and "dispositional being" as well.

<sup>30</sup> Strawson does not present his argument in exactly the way I have presented it, but what I have presented is essentially his argument.

### 3.1 Premise 1: Inseparability $\equiv$ Identity

Strawson's case for the identity of categorical and dispositional being relies on a Cartesian conception of a real distinction. On this conception, a *real distinction* holds between two things  $x$  and  $y$  when  $x$  and  $y$  are separable in concrete reality.  $x$  and  $y$  are *separable* when  $x$  can exist without  $y$ , *or*  $y$  can exist without  $x$ . There is *no* real distinction (or there is a real *non-distinction*) between  $x$  and  $y$  when they are inseparable.  $x$  and  $y$  are *inseparable* when  $x$  cannot exist without  $y$ , *and*  $y$  cannot exist without  $x$ —it is impossible for  $x$  and  $y$  to be separable.<sup>31</sup> A *conceptual distinction*, on the other hand, holds when  $x$  and  $y$  can be considered separately in thought. A *mere* conceptual distinction holds when  $x$  and  $y$  can exist separately in thought, but not in reality.

As an example, Strawson considers a triangle. There is a conceptual distinction between a triangle's trilaterality and its triangularity, since each property can be thought of independently of the other. However, this is only a mere conceptual distinction.

According to Strawson, there is *no* real distinction between these properties, since in any closed plane rectilinear figure, trilaterality is inseparable from triangularity. There is no closed plane rectilinear figure that has trilaterality but not triangularity, nor is there a figure that has triangularity but not trilaterality. Since trilaterality and triangularity are inseparable, they are not really distinct, according to Strawson.

So far, then, on Strawson's view, the inseparability of  $x$  and  $y$  is equivalent to their real non-distinctness. Strawson also wants to claim that real non-distinctness is equivalent to identity. The implication going one-way is easy enough to see. If  $x$  and  $y$  are identical, then they are really non-distinct, and so they are inseparable. But Strawson thinks that the converse is also true: if  $x$  and  $y$  are inseparable, then they are not really distinct, and thus, they are identical. For Strawson, the fact or state of affairs that  $x = y$  is *identical* to the fact or state of affairs that there is no real distinction between  $x$  and  $y$ . He takes this as an assumption (Strawson 2008, 272).

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<sup>31</sup> Note that on these definitions, if  $x$  is not separable from  $y$  (i.e.,  $x$  cannot exist without  $y$ ), it does not follow that they are inseparable, for it might be that  $y$  can exist without  $x$ .

Additionally, Strawson also argues that the ground for inseparability is nothing other than identity. He writes,

Some may think that the ground of the impossibility [i.e., of the separability of  $x$  and  $y$ ] could be something other than identity. But what else could it be? The burden of proof lies heavily on those who wish to claim that something other than identity can make it absolutely impossible for two things to come apart. Identity does the trick, because the two things are only one thing, and a thing can't come apart from itself. (Strawson 2008, 271–2)

By identifying identity as the best explanation for inseparability, Strawson provides further reason as to why inseparability entails identity. Furthermore, Strawson's explanation of inseparability has the advantage of parsimony. The result is that he avoids the need to defend some special relation between two inseparable entities  $x$  and  $y$ , and instead appeals to the familiar identity relation. The result does not rely on there being two entities plus a relation, but only one entity.

Altogether, given the equivalence between inseparability and identity, Strawson can claim that inseparable entities are identical entities. So in the example of the triangle, despite there being a conceptual distinction, "Any actually existing case of triangularity is . . . literally identical to the case of trilaterality that it can't exist without" (Strawson 2008, 271).

### 3.1.1 Oderberg's objection: essentialism

Whereas Strawson takes it that separability and real distinctness are equivalent, Oderberg maintains that the entailment goes only one way. He maintains a Thomistic notion of real distinctness, according to which "Separable existence is a sufficient but not necessary condition of there being a real distinction" (Oderberg 2009, 677). A material substance's form and matter, for example, are really distinct principles, even if they are inseparable. The same goes for substance and accident, and essence and existence (Oderberg 2009, 677; see Edwards 2002, 106). A more theoretically neutral example would be a circle. Although its properties of having a radius and having a circumference are inseparable, they are nonetheless really distinct, since the radius is twice the circumference multiplied by  $\pi$  (Oderberg 2009, 678).

For Oderberg, the reason for the inseparability is not identity, but *essence*—its nature, or that which makes it the (kind of) thing that it is. He writes:

where  $x$  and  $y$  are inseparable though there be a real distinction between them, it will either be in the *nature* of  $x$  and  $y$ , or in the nature of what they are true of (where  $x$  and  $y$  are qualities of a thing) that they are inseparable. (Oderberg 2009, 678)

In the case of a circle, although its having a radius and having a circumference are really distinct properties, they are inseparable since it is in the essence of a circle to have a radius and to have a circumference. A circle would not be a circle unless it had such properties. It is not because having a radius and having a circumference are identical properties. *Mutatis mutandis*, for triangularity and trilaterality in the case of a triangle.

The result of Oderberg's objection, then, is that the inseparability of  $x$  and  $y$  does not entail that  $x$  and  $y$  are really non-distinct. If Oderberg is correct, then premise 1 of Strawson's argument (as I have formulated it) is thereby false. Even though Oderberg affirms that a real non-distinction is equivalent to identity, unless inseparability entails a real non-distinction,<sup>32</sup> one cannot conclude on the basis of their inseparability that  $x$  and  $y$  are identical.

However, there are at least a couple of problems with this objection. Firstly, there is the following dilemma. Where  $x$  and  $y$  are properties of a thing, if  $x$  and  $y$  are inseparable, then their inseparability is explained by "the nature of what they are true of"—that is, the essence of their possessor. Suppose we ask whether the essence is something distinct (perhaps not wholly) from  $x$  and  $y$  (and whatever other properties included in it), or whether the essence just is  $x$  and  $y$  (and whatever other properties). If the essence is distinct from  $x$  and  $y$ , then the resulting view is less parsimonious than Strawson's view (leaving aside the other properties included in the essence). The resulting view would include  $x$ ,  $y$ , plus an essence, whereas Strawson's view would have only  $x$  (since  $x = y$ ). However, if the essence is nothing other than  $x$  and  $y$  (and whatever other properties), then further explanation is required for the inseparability of  $x$  and  $y$ . It would be trivial to

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<sup>32</sup> Oderberg writes, "For a real distinction to exist between  $x$  and  $y$ , it is both necessary and sufficient that there be numerical distinctness between  $x$  and  $y$  themselves" (Oderberg 2009, 678). In other words, there is no real distinction between  $x$  and  $y$  just in case  $x$  and  $y$  are numerically identical.

appeal to “the nature of what they are true of,” if the nature is nothing other than  $x$  and  $y$  and whatever else. The natures of  $x$  and  $y$  themselves would need to be clarified in order to explain their inseparability.

To use an example, reconsider a circle. Oderberg wants to explain the inseparability of its having a radius and its having a circumference by appealing to its essence. If its essence is something distinct from its properties, then Oderberg’s view includes an entity (the essence) in addition to its properties (having a radius, having a circumference, and so on). This is less parsimonious than Strawson’s view which would identify having a radius with having a circumference. If the essence is nothing other than the properties it includes, then the natures of having a radius and having a circumference needs to be clarified so as to explain their inseparability.

A second and more basic problem for Oderberg’s objection is this. Oderberg assumes a Thomistic notion of real distinctness, while Strawson assumes a Cartesian notion. While Oderberg is explicit in claiming that the Cartesian notion is incorrect, no explicit reason is given. It may be that he rejects the Cartesian notion because it is inconsistent with Thomistic metaphysics. To be sure, this is no problem for those who accept Thomism, but it begs the question against those who, like Strawson, are sympathetic to the Cartesian notion of real distinctness. It would have helped Oderberg’s case had he provided an argument against the Cartesian notion independent of a Thomistic perspective.

### 3.1.2 Against the equivalence of inseparability and identity

Recall that for Strawson, a real distinction holds between two things  $x$  and  $y$  when  $x$  and  $y$  are separable in reality, but  $x$  and  $y$  are not really distinct when they are inseparable. Since he takes real non-distinctness to be identical to identity, then it follows that the inseparability of  $x$  and  $y$  is equivalent to their identity. I offer the following *reductio* against this equivalence.

Consider two equilateral triangles,  $a$  and  $b$ . Suppose the length of each of  $a$ 's sides is 1, so let us say that  $a$  has the property of trilaterality<sub>1-1-1</sub>. Suppose the length of each of  $b$ 's sides is 2, so let us say that  $b$  has the property of trilaterality<sub>2-2-2</sub>. Since they are both

equilateral triangles, each of their angles measures at  $60^\circ$ . Let us say that both triangles have the property of *triangularity*<sub>60-60-60</sub>. Each of the properties just mentioned are determinates of the properties *trilaterality* and *triangularity*. Both triangles, then, have the determinable properties *trilaterality* and *triangularity* as well.<sup>33</sup>

Now, the determinables *trilaterality* and *triangularity* are inseparable, since no closed plane rectilinear figure can have one but not the other. Given the equivalence of inseparability and identity, it follows that *trilaterality* and *triangularity* are identical properties. However, the following principle seems to be true of determinable properties:

*Identical Determinates of Identical Determinables*: If two determinable properties  $P$  and  $Q$  are identical, then (i) every determinate of  $P$  is identical to a determinate of  $Q$ , and no two  $P$ -determinates are identical to the same  $Q$ -determinate; and (ii) every determinate of  $Q$  should be identical to a determinate of  $P$ , and no two  $Q$ -determinates are identical to the same  $P$ -determinate.<sup>34</sup>

To put it simply, if  $P$  and  $Q$  are identical determinables, then they should have all the same determinates. In the case of *trilaterality* and *triangularity*, if they are identical determinables, then every determinate *trilaterality* should be uniquely identical to a determinate *triangularity*, and *mutatis mutandis* for every determinate *triangularity*. However, this cannot be the case, since the determinates of *trilaterality* and *triangularity* are separable. This is easily seen in the case of triangles  $a$  and  $b$ . *Triangularity*<sub>60-60-60</sub> is separable from *trilaterality*<sub>1-1-1</sub>, since triangle  $b$  has *triangularity*<sub>60-60-60</sub> and *trilaterality*<sub>2-2-2</sub> (which is incompatible with *trilaterality*<sub>1-1-1</sub>). Thus, *triangularity*<sub>60-60-60</sub> is not identical to *trilaterality*<sub>1-1-1</sub>. The same can be said of *triangularity*<sub>60-60-60</sub> with respect to *trilaterality*<sub>2-2-2</sub>. Indeed, it turns out that *triangularity*<sub>60-60-60</sub> is separable from all determinates of *trilaterality*, and therefore, is not identical with any of them. Thus, given the principle of *Identical Determinates*, *trilaterality* and *triangularity* are not identical properties.

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<sup>33</sup> This is due to *determinable inheritance*: “For every determinable  $Q$  of a determinate  $P$ : if  $x$  has  $P$  at a time  $t$  then  $x$  must have  $Q$  at  $t$ ” (Wilson 2021).

<sup>34</sup> A few things should be noted of this principle. Firstly, if one prefers, one can think of it in terms of genera and species, or in a more neutral vocabulary, in terms of types and sub-types. Secondly, if we think of  $P$  and  $Q$  as sets of their respective determinates, then if they are identical, there should be one-to-one correspondence. Thirdly, as far as I can tell, the principle is plausible. It makes sense intuitively, and it is difficult to come up with a counterexample to it (at least I cannot think of one).

We now have contradictory results. Given the equivalence of inseparability and identity, trilaterality and triangularity are identical, but on the principle of Identical Determinates, trilaterality and triangularity are *not* identical. Both principles cannot be true, so either inseparability and identity are not equivalent, or else Identity of Determinates is false. Since I take Identity of Determinates to be plausible (see footnote 6)—at least more plausible than the equivalence of inseparability and identity—I argue that inseparability and identity are *not* equivalent.<sup>35</sup> Therefore, even if it turns out that categorical and dispositional being are inseparable, as Strawson maintains, it does not follow that they are identical.

## 3.2 Premise 2: Inseparability of Categorical and Dispositional Being

### 3.2.1 Mutual determination

While Strawson thinks that the identity of categorical and dispositional being will be “obvious after reflection,” he nonetheless argues for their inseparability by defending the following thesis:

nothing can possibly have the (total) categorical being that it has and not have the (total) dispositional being that it has, and nothing can possibly have the (total) dispositional being that it has and not have the (total) categorical being that it has. (Strawson 2008, 276)

I will call this the *Mutual Determination of Categorical and Dispositional Being*.

According to this thesis, an object’s total categorical being (its total combination of qualities) will determine its total dispositional being (its total combination of powers), and vice versa. Because the determination is mutual, every combination of qualities uniquely determines a combination of powers, and vice versa. And this is supposed to be true across possible worlds.

While Strawson defends Mutual Determination, it should be noted that it does not on its own entail that categorical being and dispositional being are inseparable. Even if Mutual

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<sup>35</sup> I assume in my argument that separability entails non-identity (or conversely, identity entails inseparability). Thus, if inseparability and identity are not equivalent, then inseparability does not entail identity (or conversely, non-identity does not entail separability).

Determination holds, it is possible that the possession of certain qualities (or combination of qualities) is sufficient for having no powers. In Strawson's terms, these would be instances of categorical being separable from dispositional being. I will call such qualities *unconnected qualities*. Additionally, even if Mutual Determination holds, it is possible that the possession of certain powers (or combination of powers) is sufficient for having no qualities—instances of dispositional being separable from categorical being. I will call such powers *ungrounded powers*. Since unconnected qualities and ungrounded powers are consistent with Mutual Determination, Mutual Determination is not sufficient for the inseparability of categorical and dispositional being, nor their identity.

A successful defence of Mutual Determination does not necessarily entail that categorical and dispositional being are inseparable, but Mutual Determination is nonetheless important for Strawson's view. If we suppose that inseparability and Mutual Determination are jointly sufficient for the identity of categorical and dispositional being, then the resulting view avoids the earlier problem regarding Identical Determinates (that identical determinables require identical determinates). On this view, where categorical and dispositional being are determinable properties, if they are inseparable *and* mutually determine each other, then they will be identical to each other, and they will also have identical determinates.<sup>36</sup> Of course, there is still the question of whether inseparability and Mutual Determination are indeed jointly sufficient for the identity of categorical and dispositional being, but Mutual Determination is at least necessary, it seems, to avoid the problem of Identical Determinates.

To be sure, in defending Mutual Determination Strawson does provide reasons as to why unconnected qualities are not possible. He also discusses an argument against ungrounded powers. In the remainder of this section, I will critique his defence of Mutual Determination, as well as his argument against ungrounded powers.

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<sup>36</sup> If we think of categorical and dispositional being as the set of all qualities and the set of all powers, respectively, then mutual determination will guarantee a one-to-one correspondence.



### 3.2.3 Strawson's defence of Mutual Determination (1)

Strawson's defence of Mutual Determination has two parts, corresponding to each half of the thesis. The first part of the defence pertains to the first half of the thesis: *nothing can possibly have the (total) categorical being that it has and not have the (total) dispositional being that it has*. This half of the thesis, in other words, states that an object's qualities *per se* determine its dispositions. In terms of possible worlds, in any possible world, if an object has a set of qualities *P*, then it will also have a set of dispositions *Q*—there are no worlds where objects which have *P* fail to have *Q*.

The objection that Strawson considers is an objection from Quidditism: an object can retain its categorical being across possible worlds, but its dispositional being can change depending on the different nomic environments of these worlds.<sup>37</sup> This is an objection against the inseparability of categorical and dispositional being, as well as their mutual determination. On Quidditism, properties can be recombined to fill in whatever nomic roles possible, and if this is true, then Mutual Determination is false. Lawless and causally inert worlds are also possible on Quidditism, and if they are possible, then categorical and dispositional being are separable.

Strawson, though, doubts the coherence of this objection, if laws are taken not to be linguistic or conceptual constructs, but objective principles. He thinks that the laws of nature are “essentially constitutive of, or part of, the (categorical, intrinsic) nature of matter” (2008, 277). To be more precise, he thinks that there are objective forces intrinsic to matter, which are responsible for causation. Laws of nature do not govern these forces, but rather reduce to them (1987, 255). What laws of nature there are is determined by these objective forces. As he writes, “there are any laws there are because there are the forces there are” (1987, 256). For Strawson, since these objective forces are intrinsic to matter, they are a type of categorical being. Thus, on his view, the laws of nature depend on categorical being, and for this reason he thinks that the objection from Quidditism is incoherent.

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<sup>37</sup> More precisely, this is an objection from *Bare* Quidditism. Smith (2016) has since suggested that qualitative quiddities necessarily determine (part of) the nomic profile of their possessor. In light of this type of Quidditism, the objection would need to be modified. However, Strawson's article does not seem to be concerned with something like this view.

A few things should be noted at this point. Firstly, it does not follow that if laws are objective principles, then they must be “essentially constitutive of, or part of, the (categorical, intrinsic) nature of matter.” For a Quidditist like Armstrong, laws of nature are objective principles, even if they are not constitutive of the nature of material objects. On his view, laws of nature are not linguistic or social constructs, but instances of the necessitation relation, which is a real universal.

Secondly, when it comes to objective forces (or laws), one might have expected these forces to count as dispositional being, since they pertain to causation. They are instead (or additionally) counted as categorical being because of a weak notion of categorical being. Later in his paper, Strawson explicitly equates categorical being with real or actual being, and this is why he thinks that objective forces are a type of categorical being—such laws are real. I will discuss below in more detail why this notion of categorical being is *too* weak, but for now it will suffice to say this: if Strawson’s notion of categorical being is too weak, and if objective forces should *not* count as categorical being, then his response to the Quidditist’s objection at this point fails. His response would no longer show that categorical being determines dispositional being, but only that dispositional being determines dispositional being.

Thirdly, even if the laws of nature are determined by categorical being, it is still an open question whether unconnected qualities are possible. Even if Mutual Determination holds, if there are any possible worlds that are causally inert, where the objects in it lack objective forces, then categorical and dispositional being are separable, and therefore, not identical. Further argument is required at this point to show why categorical and dispositional being are inseparable, even if they mutually determine each other.

At any rate, despite his reservations, for the sake of argument, Strawson assumes that the objection from Quidditism is coherent. However, even if it is coherent, he thinks the objection fails. He writes:

For even if it is coherent it gives us no reason (rather the contrary) to think that X’s fundamental dispositions will change on change of nomic environment. For these fundamental dispositions include the disposition to behave in way F in nomic environment 1, the disposition to behave in way G in nomic environment 2,

and so on. The same points apply *mutatis mutandis* . . . where we would be considering two qualitatively (categorically) identical things X and Y in different environments. (Strawson 2008, 277)

Here Strawson introduces the notion of *fundamental dispositions*, which are those features of an object which enable it to behave in different ways across different nomic environments. This is in contrast to non-fundamental dispositions (Strawson does not explicitly define these), which are the dispositions an object has because of the nomic environment in which it exists. Whereas the fundamental dispositions of an object are retained across nomic environments, the non-fundamental dispositions of an object will change depending on the nomic environment. And the reason that objects can take on different non-fundamental dispositions in different nomic environments is because they possess the relevant fundamental dispositions.

Now, while Strawson thinks that the appeal to fundamental dispositions supports Mutual Determination (where Mutual Determination is limited to *fundamental* dispositional being), it is not clear that it does so. There are several problems with this part of Strawson's response. One problem is that the appeal to fundamental dispositions *per se* does not entail that they are determined by categorical being. In order to support Mutual Determination, Strawson needs to show that an object's categorical being determines its fundamental dispositional being. However, he does not do this. Even if an object's having fundamental dispositions requires an object's having qualities, and even if every possible concrete object has fundamental dispositions, unless certain sets of qualities uniquely determine certain sets of fundamental dispositions, then Mutual Determination is false. And if Mutual Determination is false, then categorical and (fundamental) dispositional being cannot be identical.

Furthermore, Mutual Determination is not even possible once Strawson has already conceded so much of the Quidditist's objection. Again, the objection is that an object can have the same categorical being but different dispositional being across possible worlds. For the Quidditist, categorical properties and nomic roles can recombine in indefinitely many ways, since there is nothing to the nature of a property that would preclude it from entering into certain nomic roles with certain other properties. Since Strawson concedes

this much to the Quidditist, the result seems to be that every object has the same fundamental dispositions (namely, all of them), regardless of their particular combination of categorical being. While this entails the inseparability of categorical and fundamental dispositional being (and hence, no unconnected qualities), this also entails that Mutual Determination cannot be true.

But the situation is even worse. By conceding the Quidditist's argument, Strawson's view collapses into Quidditism. Strawson responds to the objection by appealing to fundamental dispositions, where "fundamental dispositions include the disposition to behave in way *F* in nomic environment 1, the disposition to behave in way *G* in nomic environment 2, and so on." However, described as such, fundamental dispositions do not appear to differ from logical possibility in any important way. To say that an object has a fundamental disposition to be disposed to behave in way *F* in nomic environment *n* does not appear to be different from saying that it is possible for an object to be disposed to behave in way *F* in nomic environment *n*. But the Quidditist already accepts the possibility of objects being disposed to behave in different ways in different nomic environments. Thus, if there is no difference between fundamental dispositions and logical possibility, then once Strawson concedes to the Quidditist's objection, his view becomes no different from Quidditism itself. In order to avoid this collapse, Strawson needs to show that fundamental dispositions are of a stronger modality than logical possibility.<sup>38</sup> As it stands, though, by conceding as much as he does to the Quidditist's argument, Strawson undermines his own.

To defend Strawson's view, one might consider defending the idea that categorical being determines fundamental dispositions. To be more specific, the idea is that an object's possession of a quality (or set of qualities) will uniquely determine which fundamental dispositions it also possesses.<sup>39</sup> On this view, no two sets of qualities will determine the

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<sup>38</sup> While Dispositionalists disagree on what type of modality is involved in dispositionality, they at least agree that it must be stronger than logical possibility. Typically, Dispositionalists have thought of dispositionality as a kind of necessity (e.g., Harré and Madden 1975), but Mumford and Anjum (2011) have argued that dispositionality is a modality *sui generis*.

<sup>39</sup> This is similar to Smith's (2016) suggestion that qualities can partly determine an object's nomic profile. The difference is that the idea here involves fundamental dispositions, whereas Smith seems to have in mind what Strawson would consider non-fundamental dispositions.

same set of fundamental dispositions. If this can be established, it will be possible for Mutual Determination to be true as well (provided that it is qualified to involve only fundamental dispositional being), but whether or not it is true also depends on whether fundamental dispositions determine categorical being. However, it is not quite clear how one is supposed to defend the idea that categorical being determines fundamental dispositions. (At any rate, I do not see how at the moment.) There also remains the problem of conflating fundamental dispositionality with logical possibility. And finally, even if categorical being turns out to be identical to fundamental dispositional being, the resulting view is markedly different from other forms of Identity Theory. Whereas Identity Theorists take qualities to be identical to first-order (non-fundamental) dispositions, the view here would be limited to identifying qualities with second-order (fundamental) dispositions.

### 3.2.4 Strawson's defence of Mutual Determination (2)

Strawson also attempts to defend the second half of Mutual Determination: *nothing can possibly have the (total) dispositional being that it has and not have the (total) categorical being that it has*. This half of the thesis states that an object's dispositions determine its qualities. In any possible world, if an object has a set of dispositions  $Q$ , then it will also have a set of qualities  $P$ —there are no worlds where objects which have  $Q$  fail to have  $P$ .

Against this half of the thesis, Strawson considers an objection from multiple realizability: the same disposition can be realized by different qualities, and so dispositional being does not determine categorical being. Being fragile, for example, can be realized by virtue of possessing any one of a number of qualities (e.g., being made of glass, being made of ice, being made of sugar, etc.).

However, Strawson thinks that the objection “doesn't deserve serious consideration.” He writes:

Obviously two differently constructed pocket calculators can be functionally identical. . . . Equally obviously, their total dispositional being will be different if they're differently constructed (they melt differently, float differently, smell different, etc.). It is in the end a trivial point that if they are in any way categorically different, they will necessarily be dispositionally different: one atom's difference between them makes a difference between their total dispositions. (Strawson 2008, 277)

Strawson's claim here is that categorical being supervenes on dispositional being: there cannot be a qualitative difference without a dispositional difference. To use his example, we can imagine two differently constructed calculators. Suppose that they are qualitatively identical, except the casing of one is plastic and the other aluminum. Insofar as their casings are made of different materials, they will differ in their reactions to, say, heat or certain chemicals. Strawson's point applies even to objects that more closely resemble each other. Suppose instead that we have two qualitatively identical calculators, but there is only "one atom's difference between them"—one has an extra atom. Even if they are dispositionally identical on a macro-level, they are nonetheless dispositionally different on a micro-level, because of that extra atom.

However, Strawson's response here begs the question. The claim that categorical being supervenes on dispositional being is equivalent to the claim that dispositional being determines categorical being, given that supervenience and determination are contrapositive relations (see Yoshimi 2007; Sileno 2019). To be fair, Strawson is aware of other responses to multiple realizability. He specifically cites Heil, who he admits deals with the objection in a "tolerant manner" (Strawson 2008, 277, fn. 11). And so to help his case, it will be worth discussing Heil's response as well.

According to Heil, the idea of multiple realizability is founded on a conflation of predicates and properties. On multiple realizability, when the same dispositional predicate applies to various types of objects, it is assumed that they all possess the same dispositional property that corresponds to that predicate. Heil, however, denies this. He writes:

We find it convenient to say that a teacup, a piece of slate, a pocket watch, and a gramophone record all possess the same disposition: being fragile. These items are examples of things that typically shatter when struck or dropped. But do they,

on that account, possess the *very same* disposition? That seems unlikely: the objects shatter in different ways. To be sure, the shatterings are similar enough to fall under a single predicate. But the similarity in question is far from precise. I take it as uncontroversial that, if distinct objects possess the very same property, *F*, they must be precisely similar *F*-wise. To assume that ‘is fragile’ must name a higher-level property is to let the linguistic tale wag the ontological dog. (Heil 2005, 347)

For Heil, even though we describe all the aforementioned objects as fragile, there is no one single disposition of fragility that they all possess. They possess different dispositions, and this is evident by the fact that they all shatter in different ways. We can imagine, for example, dropping a vinyl record and a similarly shaped porcelain disc from the same height. While both will shatter upon hitting the ground, the record will shatter into fewer pieces than the porcelain disc. Although both are similar in that they shatter from being dropped (hence, why we say they are both fragile), they have different dispositions in virtue of which they shatter in different ways. They have similar yet distinct dispositions. The result, then, is that even if dispositions are realized by qualities, they are not *multiply* realizable—no two qualities will realize the same disposition.

A similar response available to the Identity Theorist is a more ontologically involved version of Heil’s argument. Rather than thinking of “is fragile” as simply a predicate, one might think instead that the predicate picks out the determinable property of being fragile. The Identity Theorist can agree with the multiple realizability objection that *determinable* dispositions are multiply realizable by different qualities, while maintaining that *determinate* dispositions are realized only by their corresponding determinate qualities. The same motivation as above applies here: different objects with the same determinable disposition (those which fall under the same dispositional predicate) manifest it in different ways.

Whereas Strawson’s response is really just the conclusion he is aiming for, these last two responses provide the reasons to support it. Frankly, I find these responses persuasive.<sup>40</sup> But again, even if Mutual Determination holds, it does not follow that categorical and

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<sup>40</sup> As pushback, a proponent of multiple realizability might try to identify two different types of objects that possess the same determinate disposition but in virtue of different qualities (although I’m not sure what these would be).

dispositional being are inseparable—there is still the possibility of unconnected qualities and ungrounded powers. This is a problem that remains in spite of Strawson’s arguments so far. Fortunately, Strawson does provide an argument against ungrounded powers, and it is to that argument we now turn.

### 3.2.5 Strawson’s argument against ungrounded powers

In critiquing ungrounded powers, Strawson has in mind the Pure Powers View, the theory that the essence of *every* intrinsic property is exhausted by its dispositionality (e.g., its relations to other properties, including its stimulus conditions and manifestations). However, his argument works just the same against any type of Dispositionalism that includes ungrounded powers, since his view entails that no dispositional being is separable from categorical being.

Now, Strawson’s target is the claim that all being is dispositional being (and no being is categorical being), which is his characterization of the Pure Powers View (albeit, an extreme version of the view; see Taylor 2018). If this claim is true, then dispositional being is separable from categorical being, and hence they cannot be identical. But for Strawson, this claim is incoherent if the dispositional is defined to exclude the categorical; defined as such, dispositional being cannot be categorical being. However, Strawson thinks that “All being is categorical being because that’s what it is to be! That’s what being is!” (Strawson 2008, 278) Thus, on his view, since dispositional being is being, it is also categorical being.

Strawson admits that he is begging the question, but I think that the more important problem is that his definition of “categorical being” is too weak. Dispositionalists agree that a disposition or power is a real property, but they would hesitate to label it as a “categorical property” (or “categorical being”) because it just so happens (unfortunately) that in contemporary debate, the term means *more* than just being a real or actual property. Not only is a categorical property supposed to be a real property, it is often taken to be a type of property that a dispositional property *cannot* be. Place (1997), for example, thinks of categorical properties as non-modal, as opposed to dispositional properties, their modal counterpart. Molnar (2003), in much more direct terms, thinks of



them as non-powers. And even where “categorical property” is not defined to be inconsistent with “dispositional property,” it may be taken to be a stronger term than simply “real property.” For example, Identity Theorists, such as Martin (2008), Heil (2003), and Jacobs (2011), prefer to think of “categorical properties” as qualitative properties. By contrast, Strawson’s notion of “categorical being” is much too weak, and hence, uninteresting. Dispositionalists already agree that powers are real (and are categorical in that sense), but they also think that there is more to being a categorical property than simply being a real property. To avoid triviality, Strawson needs to show why dispositional being is also categorical being, where “categorical being” means more than just real being.<sup>41</sup>

To be sure, while Strawson equates categorical being and real being in his discussion of ungrounded powers, he does also describe categorical being in other terms.

Unfortunately, these alternative descriptions are not helpful. For example, in his discussion of the objection from Quidditism, he describes categorical being as being an intrinsic nature, and he describes categorically identical objects as qualitatively identical objects (Strawson 2008, 277). However, some Dispositionalists already maintain that powers are intrinsic, so intrinsicity does not distinguish between categorical and dispositional properties. Furthermore, Strawson does not define what he means by “quality,” “qualitativity,” or “qualitative identity.” If qualitative being turns out to be nothing more than real being, then Strawson’s notion of categorical being remains too weak.

Alternatively, Strawson describes categorical and dispositional being in terms of act and potency. He prefers referring to dispositional being as potential being or power being, conveying the idea that such being is indeed *potent* or *powerful*. And he thinks of categorical being as actual being, which for him, is just real being. He concludes, then, that “Power being is categorical being, like all being,” since “Potency entails actuality,

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<sup>41</sup> There is another threat here too. If “categorical property” simply means “real property,” then Strawson’s view threatens to collapse into the Pure Powers View (see Taylor 2018 and chapter 5 of the present work).

reality” (Strawson 2008, 278). However, the same problem remains: the notion of categorical/actual being is still too weak.<sup>42</sup>

As it stands, Strawson’s notion of categorical being is too weak to be all that important or interesting. In order to provide an adequate argument against ungrounded powers, he needs a stronger notion of categorical being, but one that avoids making his view incoherent. As seen in the last chapter, it is of critical importance that Identity Theorists identify adequate notions of qualitativity (categorical being) and dispositionality (dispositional being)—notions too weak or too strong compromise the theory.

### 3.3 Conclusion

In conclusion, Strawson’s case for an Identity Theory of properties is unsuccessful. He fails to show that inseparability entails identity, and even if inseparability and identity were equivalent, he fails to show why categorical and dispositional being are inseparable. At least where properties are concerned, their inseparability is not sufficient for identity because of the problem regarding Identical Determinates (i.e., determinates are separable, even if determinables are inseparable). Furthermore, while Strawson has argued for Mutual Determination, I have tried to show that his defence of it fails. Even further, Mutual Determination does not even entail the inseparability of categorical and dispositional being. And while Strawson has argued against ungrounded powers, I have tried to show why this fails. The final thing to note about Strawson’s case for Identity Theory is that it is incomplete. At least in the article we have been discussing, he does not attempt to explain why there cannot be unconnected qualities, i.e., entities that have only categorical being, but no dispositional being. Even if inseparability were sufficient for identity, and even if dispositional being is categorical being, as long as unconnected qualities are possible, then categorical being is separable from dispositional being, and so they cannot be identical.

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<sup>42</sup> There is another problem. If Strawson takes “potential being” and “actual being” in their fuller Aristotelian-Thomistic sense, then while actual being (in this sense) is stronger than real being, potential being *cannot* be actual being. On the Aristotelian-Thomist view, actual being and potential being are both real being, but they are not identical to one another. For while potency entails act (there is no pure potency), the converse is not true (there is pure act). Potential and actual being are separable in the case of pure act, and so they cannot be identical (see Oderberg 2009).



## Chapter 4

### 4 Dual Aspect Account

When it comes to the debate on powers, most attention in recent decades has been dedicated to Quidditism and the Pure Powers View. While the Powerful Qualities View has been recognized as an alternative middle view, there was relatively scarce literature since Martin and Heil had first published on it (Martin and Heil 1999; Heil 2003, 2005, 2012; Martin 2008). However, as Henry Taylor has observed, “There is a growing desire in the metaphysics of properties for a view that effectively steers between the twin extremes of Categoricalism and pure powers” (Taylor 2019, sect. 5). This growing desire has given rise to recent attempts by philosophers in formulating their own theories of powerful qualities. Joaquim Giannotti (2021) has made one such attempt: the *Dual Aspect Account*. Before introducing some of the features of this view, it will be helpful to first review the standard formulation of the Powerful Qualities View.

The Powerful Qualities View, up until recently, has been synonymous with Martin and Heil’s Identity Theory of properties. Recall that the central thesis of Identity Theory is this:

If  $P$  is an intrinsic property of a concrete object,  $P$  is simultaneously dispositional and qualitative . . .  $P$ ’s dispositionality,  $P_d$ , is  $P$ ’s qualitativity,  $P_q$ , and each of these is  $P$ :  $P_d = P_q = P$ .<sup>43</sup> (Heil 2003, 111; cf. Giannotti 2021, 608)

This is the mark of Identity Theory. Insofar as it requires that every property be dispositional and qualitative, it distinguishes itself from non-Powerful Qualities Views. Insofar as it requires that a property’s dispositionality be identical to its qualitativity, it distinguishes itself from other kinds of Powerful Qualities Views. However, Giannotti notes that here the notions of dispositionality and qualitativity are in need of clarification. The thesis itself does not specify in positive terms how these notions ought to be understood.

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<sup>43</sup> In characterizing Identity Theory, Heil makes the claim that “ $P$ ’s dispositionality and qualitativity are *not aspects* or properties of  $P$ ” (Heil 2003, 111), which has been omitted in the in-text quotation. Here Heil thinks of aspects as parts or higher-order properties, but Giannotti, as we shall see, does not think of aspects in these terms, but as ways of being (hence, the omission).

Part of Giannotti's aim is to consider several senses in which dispositional and qualitativity might be construed: conceptual and ontological. For Giannotti, the ontological sense is of particular importance. He offers an ontological sense of dispositional and qualitativity in terms of a particular notion of *aspects*. These aspects are a property's ways of being, and a property's dispositional and qualitativity are identical to its dispositional and qualitative aspects, respectively. Using this notion of aspects, he identifies a couple of theories of powerful qualities. The first of these (for reasons that will become clear) is what I will call *Aspect Pseudo-Identity Theory*. Giannotti rejects this view, and proposes instead what he calls the *Dual Aspect Account*, which is a *Non-identity Theory* of powerful qualities. While he does not give a complete defence of this latter view, his aim is to show that even if Identity Theory is false, there is an available account of powerful qualities, namely, the Dual Aspect Account.

This chapter will be a critical examination of Giannotti's notion of aspects as well as the aspect-based theories he identifies. Section 4.1 will be an overview of Giannotti's notion of aspects, and section 4.2 will be an examination of the notion of supervenience that he uses. In section 4.3, I will discuss Aspect Pseudo-Identity Theory, which Giannotti takes to be the outcome of trying to combine aspects with Identity Theory—the result is supposed to be distinct but similar to Identity Theory. Giannotti rejects this view and so do I, but I will argue that he bases it on an invalid inference. This invalid inference is also an assumption in the Dual Aspect Account that he proposes. In discussing this invalid inference, I will also make an important clarification with respect to the nature of aspects.

In section 4.4, I will discuss what I will call *Aspect Identity Theory*. This is the type of view that Giannotti should have identified in combining aspects with Identity Theory. However, I will argue that the notion of aspects does not contribute much to Identity Theory, and that Aspect Identity Theory does not seem to differ ontologically from Martin and Heil's original theory. The result is that the notion of aspects does not improve Identity Theory, and Aspect Identity Theory is vulnerable to the same problems as Identity Theory.

In section 4.5, I will discuss Giannotti's proposed Dual Aspect Account. His main goal is not to provide a complete defence of the view, but to show that it is an available theory of powerful qualities should Identity Theories prove false. He does, though, give some reasons for preferring this theory over another Non-identity Theory, namely, the Compound View. I will argue why his reasons are unconvincing. Additionally, taking into account the invalid inference that Giannotti assumes, I suggest four reinterpretations of the Dual Aspect Account. I argue, though, that these reinterpretations are less parsimonious than what Giannotti expected of his original statement of the view, some even collapsing into other theories.

The significance of all this discussion is that it suggests that the notion of aspects is not a helpful way of understanding the Powerful Qualities View. According to Giannotti, the notion of aspects is supposed to make the Powerful Qualities View more precise, but this increase in precision does not come with an increase in plausibility.

## 4.1 Dispositional and Qualitative as Aspects

As mentioned already, Giannotti considers several senses in which dispositional and qualitative might be construed. The conceptual sense is derived from the idea that dispositional and qualitative are "different ways of representing the selfsame property" (Martin and Heil 1999, 47), or "the selfsame property differently regarded" (Heil 2003, 112). Martin and Heil's analogies of properties to ambiguous pictures suggest this sense as well. Giannotti subdivides the conceptual sense into two further senses: one where dispositional and qualitative are concepts that apply to the same property, and its linguistic counterpart, where they are descriptions of the same property. These conceptual senses are of little interest for this chapter, so I will end my discussion of them here.<sup>44</sup>

The more interesting sense is the ontological one, according to which dispositional and qualitative are aspects of a property. An *aspect*, according to Giannotti, is a property's *way of being*. "The ways of being of a property are ways that a property is," although

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<sup>44</sup> For a discussion of Identity Theory, where dispositional and qualitative are taken to be merely conceptual, refer back to section 2.1.2.

“The notion of a way of being of a property is hard to characterise and appears to be conceptually primitive” (Giannotti 2021, 611). Furthermore, while properties have aspects, these aspects are not parts of properties. Rather, “To say that a property has certain aspects means that it exists in certain manners, or ways” (Giannotti 2021, 611).

The aspects of a property contribute to the powers and qualities of the object that possesses that property. The dispositional aspect of a property contributes to what the property-bearer could and would do under the right circumstances. If a property has some dispositional aspects, then there is a power or cluster of powers that every bearer of that property possesses. For example, by way of its dispositional aspect(s), the property of having gravitational mass gives a particle the power to produce a determinate gravitational force. The qualitative aspect of a property contributes to what the property-bearer is like, or its occurrent makeup. If a property has some qualitative aspects, then they contribute to the qualitative make-up of every bearer of the property. For example, by way of its qualitative aspect(s), the property of having a certain mass gives a particle a determinate quantity of mass.

This idea that dispositionality and qualitativity contribute powers and qualities to property-bearers is taken from Heil:

it is convenient, although potentially misleading, to describe properties as powers, or as qualities, or as both powers and qualities. Rather, properties are taken to contribute in distinctive ways to the dispositionalities and qualities of their possessors. The dispositionalities and qualities possessed by a given object depend on its ensemble of properties. (Heil 2003, 112)

What Giannotti adds to this is the identification of dispositionality and qualitativity with a property’s aspects, and it is by way of these aspects that properties contribute powers and qualities.

Furthermore, there are four additional qualifications to Giannotti’s notion of aspects (here I will use my own labels for them). According to the qualification of *Abstraction*, an aspect of a property can be considered by abstraction, although aspects themselves are not to be confused with concepts. While an aspect is a way that a property is, abstraction is the mental process of selective attention to a specific aspect of a property. This is just

the familiar Lockean partial consideration used by Martin and Heil, but here applied in terms of aspects.

The other qualifications include *Determination*, *Supervenience*, and *Modal Fixity*. On Determination, the nature of a property determines its aspects. On Supervenience, the aspects of a property supervene upon it, such that “if the aspects of a property P supervene on P, then it is impossible that P exists and P’s aspects do not exist” (Giannotti 2021, 612). Supervenience is a logically stronger version of Determination: not only does P determine its aspects, but “if the aspects of a property P supervene on P, then it is *impossible* that P exists and P’s aspects do not exist” (Giannotti 2021, 612; emphasis added). Furthermore, Giannotti specifically makes use of Armstrong’s (1997) notion of supervenience and the related notion of the “ontological free lunch.” Finally, on Modal Fixity, the aspects of a property are modally fixed: “In every possible world, for every property P, a change in P’s nature would determine a change in P’s aspects” (Giannotti 2021, 612). Modal Fixity rules out the possibility that a property has different aspects in different worlds.

To illustrate his theory of aspects, Giannotti provides this helpful example:

The property of having a certain charge disposes a particular  $x$  to generate electromagnetic fields. Disposing  $x$  to generate electromagnetic fields is an aspect of having a certain charge;<sup>45</sup> it is a way the property of having a certain charge is. We can consider this aspect in abstraction from other aspects of the property of having a certain charge such as that of disposing  $x$  to exert a force in accordance to Coulomb’s law. Once you have the property of having a certain charge, you get its aspects of disposing a bearer to generate electromagnetic fields and exerting a force in accordance to Coulomb’s law. These aspects supervene on the property of having a certain charge. Therefore, they do not constitute a genuine addition to being. Lastly, these aspects are modally fixed: in every possible world where the property of having a certain charge exists, it has the aspects of disposing a bearer to generate electromagnetic fields and exerting a force in accordance to Coulomb’s law. (Giannotti 2021, 213)

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<sup>45</sup> By contrast, the qualitative aspect of having a certain charge, according to Giannotti, is having a determinate quantity of coulombs (see Giannotti 2021, 617).



## 4.2 The Supervenience of Aspects

The qualification of Supervenience is one of the more important features of Giannotti's theory of aspects. Not only does it involve the notion of supervenience, but also Armstrong's doctrine of the *ontological free lunch*: "whatever supervenes . . . is not something ontologically additional to the subvenient" (Armstrong 1997, 12). Internal relations, according to Armstrong, are instances of this doctrine. Internal relations supervene on the intrinsic natures of their relata, and insofar as this is the case, they are not any entities in addition to their relata. Examples of such relations include identity, resemblance, difference/distinctness, and arguably, truthmaking. Mereological wholes are another instance that Armstrong considers: while the whole supervenes on its parts, it is not an extra entity—rather, the whole is identical to its parts (arranged in a certain way).

Before discussing what this means for aspects in relation to properties, there is some reason to doubt the ontological free lunch, at least as a *general* feature of supervenience. Lowe (2011), for example, has expressed reservations with respect to internal relations. In his review of Armstrong's (2010) *Sketch for a Systematic Metaphysics*, Lowe writes that the idea that internal relations supervene on (or are necessitated by) their relata suggests that they are *real* relations. He writes:

Internal relations, for instance, are said to be 'an ontological free lunch' because 'given the terms [of the relation], the relation is necessitated' (p. 25). That seems to mean: its existence is necessitated by the existence of its terms (or relata). But then it is something 'additional' to its terms, surely: they are two things (if the relation is dyadic) and it is a third, distinct from each of them. I would much prefer to say that certain relational truths (the 'internal' ones) are irreducibly relational but have no relational truthmakers, the 'relata' alone sufficing for their truth. (Lowe 2011)

Besides that, I would add that there are other cases of supervenience that do involve additional being. One such case is the supervenience of a triangle's angles upon the lengths of its sides: two triangles that differ with respect to their angles must also differ with respect to the lengths of their sides. But despite supervenience, the property of having determinate angles is in *addition* to (i.e., is *distinct* from) the property of having sides of determinate lengths (since there are infinitely many triangles with the same angles but different side lengths). Similar things may be said of the properties of other

two-dimensional shapes, such as a circle's having a radius and having a circumference, which mutually supervene on each other.

However, despite these objections, it appears that there are at least *some* ontological free lunches. Mereological wholes, for instance, are not ontological additions to their parts, despite supervening on them. And not only mereological wholes, but any pair of identical entities involves the ontological free lunch. Where  $x$  and  $y$  are identical,  $x$  supervenes on  $y$  (and  $y$  on  $x$ ), yet  $x$  is not an entity in addition to  $y$  (nor is  $y$  to  $x$ ), since they are identical. However, note that just because  $x$  is not an *extra* entity, it does not follow that it is *no* entity at all. At any rate, while there are cases of ontological free lunches, supervenience is no guarantee of such.

### 4.3 Aspect Pseudo-Identity Theory

According to Giannotti, aspects supervene on properties. Consequently, “the aspects of a property do not constitute a genuine addition to being with respect to the property of which they are aspects” (Giannotti 2021, 612). This is the doctrine of the ontological free lunch as applied to aspects. Although it is doubtful that supervenience necessitates an ontological free lunch, for the sake of the present discussion, I will assume that a property's aspects are indeed ontological free lunches. What, then, does this mean for Identity Theory if it were to involve Giannotti's notion of aspects?

Recall that according to the central thesis of Identity Theory, a property's dispositionality and qualitativity are identical to each other, and to the property itself. This identity is numerical identity—a property's dispositionality *is* its qualitativity, and each *is* the property itself. Giannotti, however, thinks that numerical identity cannot be involved where aspects are concerned. Given that aspects supervene on properties, and given the doctrine of the ontological free lunch, Giannotti infers that “Aspects are not any kind of entities.” And if aspects are not entities, “they cannot be the relata of the standard numerical identity relation” (Giannotti 2021, 615). What this means, then, is that a theory of properties that involves aspects cannot, strictly speaking, be a version of Identity

Theory. If the aspects of a property are not entities, they cannot be identical to each other, nor can they be identical to the property itself.

However, despite maintaining that aspects are not entities, Giannotti maintains that the resulting view is sufficiently close to Identity Theory. Like Identity Theory, this view maintains that every property has dispositionality and qualitativity, and it further specifies that these are aspects which belong to the property. But when it comes to the relation between dispositional and qualitative aspects, he suggests that “One way to capture the spirit of the original Identity claim [i.e.,  $P_d = P_q = P$ ] is to say that there is no real, ontologically robust distinction between a property’s dispositional aspect and its qualitative one” (Giannotti 2021, 615). Thus, whereas Identity Theory makes positive claims about the identity of a property’s dispositionality and qualitativity, the theory that Giannotti identifies involves only the complementary negative claim that there is no real distinction between dispositionality and qualitativity. Even if aspects are not entities, and hence, cannot be numerically identical with anything, this theory at least resembles Identity Theory insofar as it involves this negative claim. Let us call this *Aspect Pseudo-Identity Theory*.

While Giannotti does not endorse Aspect Pseudo-Identity Theory, he wants to at least identify a version of Identity Theory that involves aspects. Doing so “improves the precision” of Identity Theory, and the resulting theory is one of a “number of interesting possibilities” for Identity Theory (Giannotti 2021, 610). However, there are multiple issues with this view. For one, despite maintaining that aspects are not entities, Giannotti wants to say that “there is no real, ontologically robust distinction between a property’s dispositional aspect and its qualitative one” (2021, 615). What exactly does this mean? To say that there is no real distinction between entities  $x$  and  $y$  is to say that they are *identical*. But aspects, as Giannotti maintains, are not entities and hence, they cannot be identical. His claim, then, can be taken to suggest that there is only a conceptual distinction between dispositionality and qualitativity, even if there are no aspects in reality. Indeed, he suggests that this is one way to interpret the theory (Giannotti 2021, 615). But if there is only a conceptual distinction between dispositionality and qualitativity, then Giannotti has not really provided an *ontological* sense of

dispositionality and qualitativity (at least not in any robust way). Nor does he really “capture the spirit” of Identity Theory. Sure, Identity Theory maintains that there is no real distinction between a property’s dispositionality and qualitativity (and the property itself), but this real non-distinctness is supposed to be identity. Lastly, if there are no objective aspects, then dispositionality and qualitativity lose their objectivity and intrinsicity: “whether an object has powers and qualities depends in part on the considerings that happen (on what we see things as)” (Molnar 2003, 155–6; see also section 2.2.1 of the present work). Being Dispositional Realists, Identity Theorists want to maintain the objectivity and intrinsicity of powers.

There is yet another problem with Aspect Pseudo-Identity Theory: it is based on a *non sequitur*. Assuming that aspects supervene on properties, and assuming that the doctrine of the ontological free lunch holds, it follows that aspects are not extra entities. Giannotti infers from this that “Aspects are not any kind of entities” (Giannotti 2021, 615), and this claim is fundamental to Aspect Pseudo-Identity Theory (as well as Giannotti’s Dual Aspect Account). However, this inference is not justified: just because what is supervenient is not an additional entity, it does not follow that it is no entity at all. As mentioned before, pairs of identical entities (such as mereological wholes and their parts) are instances of supervenience where the supervenient is in fact an entity—just not an entity in *addition* to the subvenient. Thus, just because aspects are not additional entities, it does not follow that they are not any kind of entities.<sup>46</sup>

Furthermore, even if we admit that internal relations are supervenient non-entities, aspects are not internal relations, so we cannot infer that they too are non-entities on that basis. But perhaps one might wish to maintain that aspects are *like* internal relations in the following way. Recall that in discussing internal relations, Lowe prefers to say that “certain relational truths (the ‘internal’ ones) are irreducibly relational but have no

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<sup>46</sup> If aspects were not entities, then there would be the additional question regarding their relation to the subvenient. It might make sense to infer that aspects are non-entities if aspects are representations of an invariant “something or other” from different points of view (conceptual, or even physical or geographical). Thanks to Robert DiSalle for this point. I suggest, though, that the inference is not available for those who think of aspects in Giannotti’s terms. Giannotti’s characterization of aspects suggests that they are not mere representations, but rather objective features of properties, which contribute to the occurrent makeup and dispositional profiles of objects.

relational truthmakers, the ‘relata’ alone sufficing for their truth” (2011). One might say that aspects are similar: certain truths about properties (regarding their “aspects”) have no real aspects as truthmakers, but the nature of the properties themselves suffice for their truth. The result is a view where (supposedly) there are no aspects, but we can nonetheless speak truly about a property’s aspects (e.g., that they supervene on properties). However, if properties can be the truthmakers for propositions about aspects, then it must be because of the nature of the properties themselves. Such truths depend on the *ways* that the properties are—that is, on their aspects. Truths about aspects require real aspects.

It is not clear, therefore, why aspects are not entities. Giannotti needs to provide other reasons for why this is the case. We cannot just infer that they are not entities from the claim that they supervene upon properties. However, there is a way to maintain an ontologically robust sense in terms of aspects. While it is not my aim to give a defence of real aspects, the way Giannotti has described aspects suggests that they should be taken as real entities. Firstly, aspects are supposed to be ways of *being*, which suggests their reality. It seems incoherent to claim that aspects are ways of being, and yet are not entities. Secondly, aspects are supposed to determine or contribute to the powers and qualities of property bearers. It is dubious that they can do so if they are not anything at all. Thirdly, the four qualifications of Abstraction, Determination, Supervenience, and Modal Fixity seem to require real aspects as well. These qualifications describe the *relations* between properties and their aspects, and relations require relata. Again, my aim is not to give a defence of real aspects, but the way Giannotti describes them seems to require that they be real things.

#### 4.4 Aspect Identity Theory

Now, if aspects are real, we can identify the following version of Identity Theory: the view that the aspects of a property are identical to each other and to the property itself. Let us call this *Aspect Identity Theory*. This is the version of Identity Theory that Giannotti should have identified had he not wrongly inferred that aspects are not entities at all. Aspect Identity Theory is simply Identity Theory with the added qualification that the dispositionality and qualitativity of a property are its aspects, its ways of being.

Dispositionalism is the aspect that contributes powers to a property bearer, and qualitativeness is that which contributes qualities. The dispositional and qualitative aspects are identical to each other, and each is identical to the property itself. Since Giannotti thinks that the notion of aspects makes the Powerful Qualities View more precise, we can suppose that this advantage also applies to Aspect Identity Theory. Thus, one of the supposed advantages of Aspect Identity Theory is that it makes the notions of dispositionalism and qualitativeness more precise, in terms of aspects.

However, Giannotti considers the following argument, which counts against Aspect Identity Theory:

By virtue of a property *P*'s dispositional aspect, there is a power or cluster of powers that every bearer of *P* possesses. In contrast, there is no power or cluster of powers that every bearer of *P* possesses in virtue of *P*'s qualitative aspect. Therefore, dispositional and qualitative aspects are distinct. An example will illustrate this argument. Suppose that the property of having a certain mass is a powerful quality. By virtue of the dispositional aspect of having a certain mass, a particle has the power to generate a gravitational force. In contrast, there is no power that the particle has by virtue of a qualitative aspect of mass such as that of having a certain quantity of matter. . . . this is just a qualitative contribution of the property of having a certain mass to the occurrent make-up of the particle. (Giannotti 2021, 617)

In his paper, Giannotti discusses this argument with respect to Aspect Pseudo-Identity Theory, but the same reasoning is applicable to Aspect Identity Theory. And since Giannotti thinks that the argument “seems to be compelling” (Giannotti 2021, 617) against Aspect Pseudo-Identity Theory, I suspect that he would find it so with respect to Aspect Identity Theory. But why does Giannotti find the argument compelling?

The premise regarding a property *P*'s dispositional aspect is trivial given that it follows from Giannotti's description of dispositional aspects. Thus, whether or not the argument is compelling has to do with the plausibility of the premise regarding *P*'s qualitative aspect. The premise states that “there is no power or cluster of powers that every bearer of *P* possesses in virtue of *P*'s qualitative aspect.” But this does *not* follow from Giannotti's description of qualitative aspects: “if a property *P* has some qualitative aspects, then they qualitatively contribute to the make-up of every bearer of *P*” (2021,

614). This description does not entail that qualitative aspects cannot or do not contribute powers. Giannotti confirms this when he writes:

Here I acknowledge that someone might favour a characterisation of the qualitative aspect in opposition to the dispositional one. Accordingly, a property's qualitative aspect is one that does not contribute in any way to the dispositionality of a bearer of that property. . . . While it remains an available option, this conception prevents the Identity Theory to take off the ground. . . . In contrast, *the proposed characterisation leaves open the possibility that a property's qualitative aspect is also dispositional*. (Giannotti 2021, 614; emphasis added)

Now, even if it is possible for qualitative aspects to be dispositional, there might still be reasons to think that they, in fact, cannot or are not dispositional. And if such reasons are plausible enough, we would have compelling reasons to accept the argument against Aspect Identity Theory. Unfortunately, Giannotti does not provide such reasons, which is especially puzzling given his admission of the possibility that qualitative aspects can be dispositional.

Moreover, there is some reason to think that qualitative aspects *are* dispositional, insofar as they contribute (albeit indirectly) which powers an object possesses. Qualitative aspects contribute qualities, and the qualities that an object possesses explain which powers it possesses (see chapter 2.3.1). If a chunk of wood, for example, were carved into a ball, it would have the power to roll, and cutting a key makes it ready to open certain locks. In each case, the powers to roll and to open certain locks are had in virtue of each object's shape. Giannotti's example of mass appears to be another example as well: a qualitative aspect of mass, according to Giannotti, is having a certain quantity of matter, but that quantity is relevant to how much gravitational force can be generated. These examples seem to suggest that the qualitative aspect of a property can contribute to the powers of a property bearer (albeit indirectly, via the qualities it contributes).<sup>47</sup>

While I am doubtful of Giannotti's reasons for rejecting Aspect Identity Theory, there are nonetheless other reasons to reject the view. In particular, I want to suggest that Aspect

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<sup>47</sup> Perhaps a better way to argue against Aspect Identity Theory is to show why dispositional aspects do *not* contribute to the qualities of property-bearers. As discussed in chapter 2.3.1, while the qualities of an object explain which powers it has, the converse does not seem to be true. Within the context of Aspect Identity Theory, it can be argued that the dispositionality of a property does not contribute qualities either directly or indirectly (via the powers it does contribute).

Identity Theory is vulnerable to the same problems as Martin and Heil's original Identity Theory, since both views so closely resemble each other. Indeed, the main "difference" (if it can be called that) between Aspect Identity Theory and Identity Theory is that the former identifies qualitativity and dispositionality with aspects. However, while the notion of aspects as ways of being is consistent with Identity Theory, it does not seem to add anything substantial to the theory. The notion of aspects is supposed to make Identity Theory precise, but the resulting Aspect Identity Theory seems to be *merely* a more articulate expression of Identity Theory. This can be seen by considering some of the most important features of Giannotti's notion of aspects.

Aspects are supposed to be those ways of being of properties that contribute powers and qualities to objects. The dispositional aspect contributes powers, and the qualitative aspect contributes qualities. On Identity Theory, the dispositionality of a property contributes powers, while the qualitativity contributes qualities. By identifying dispositionality and qualitativity with aspects, Aspect Identity Theory does not contribute anything too insightful. Aspects do not behave differently from how dispositionality and qualitativity are described in Identity Theory. Nor do aspects really provide a deeper explanation of dispositionality and qualitativity, since "The notion of a way of being of a property is hard to characterise and appears to be conceptually primitive" (Giannotti 2021, 611).

Furthermore, the four qualifications of Giannotti's notion of aspects (as well as the ontological free lunch) are all entailed by the original Identity Theory. With respect to *Abstraction*, Martin and Heil have been explicit in maintaining that properties can be considered as either powers or qualities. Also, since Identity Theory identifies property's dispositionality with its qualitativity, and each with the property itself, the qualifications of *Determination*, *Supervenience*, and *Modal Fixity* all follow. The ontological free lunch also applies in Identity Theory: a property's dispositionality and qualitativity supervene on the property itself, but are not extra entities since they are identical to the property.

It seems, then, that there are no substantial differences between Identity Theory and Aspect Identity Theory. The difference between these two theories appears to be merely



verbal. On the level of description, whereas Identity Theory refers to a property's qualitativity and dispositionality, Aspect Identity Theory labels these as a property's aspects. However, on the level of ontology, the notion of aspects does not add anything that was not already entailed by Identity Theory. If Aspect Identity Theory is supposed to be a more articulate expression of Identity Theory, it is only superficially so. If what I am suggesting is correct, then the problems that Identity Theory is vulnerable to (see chapter 2) are also problems for Aspect Identity Theory. And it is not clear that the notion of aspects can help address these problems. Thus, even if Giannotti's argument is unsuccessful against the theory, there are further reasons to doubt Aspect Identity Theory.

## 4.5 Dual Aspect Account: Powerful Qualities without Identity

While Giannotti is not committed to it, he proposes the *Dual Aspect Account* as an alternative theory of powerful qualities. On this view, every property has dispositional and qualitative aspects. However, unlike Aspect Identity Theory, it is not committed to the further notion that these aspects are identical to each other and to the property itself. It is a theory of powerful qualities without also being an Identity Theory. This theory is supposed to have the following advantages. First, as with the other aspect-based theories so far discussed, the notion of aspects is supposed to increase the precision of the Powerful Qualities View, and clarify the theory's ontological commitments. Secondly, it evades the objection of incoherence. Identity Theory is often charged with logical inconsistency because it identifies dispositionality with qualitativity. The Dual Aspect Account avoids this charge altogether because it is not committed to the identity. Thirdly, and most pertinent to Giannotti's purposes, is that the Dual Aspect Account is an available option for the Powerful Qualities View should Identity Theory prove false.

### 4.5.1 The Dual Aspect Account versus the Compound View

Although Giannotti identifies the Dual Aspect Account as an available account of powerful qualities, he does not offer a complete defence of it. He does, however, consider its relative merits in comparison to another Non-identity Theory of powerful qualities: the Compound View. His argument, then, is that if one prefers a Non-identity Theory of powerful qualities, one should prefer the Dual Aspect Account.

According to the Compound View, “properties are essentially compounds of *distinct* dispositional and qualitative parts” (Taylor 2018, 1438). Like the Dual Aspect Account, the Compound View denies that a property’s dispositionality and qualitativity are identical to each other, and that these are identical to the property itself. The main difference is that the Compound View is supposed to be a more ontologically robust theory: dispositional and qualitative parts are real parts, but aspects are allegedly non-entities. While both theories are alternatives to both Quidditism and the Pure Powers View, Giannotti reasons that the Dual Aspect Account is more preferable for a couple of reasons.

The first reason is that the Dual Aspect Account does not require that qualitativity be defined negatively. This is supposed to preserve the spirit of Identity Theory, which considers the mutual exclusivity of dispositionality and qualitativity to be “deeply flawed” (Heil 2003, 118). To be sure, Taylor does not explicitly claim that the Compound View requires that qualitativity be defined negatively, as non-dispositional. He writes, rather, that “This view *could* define the ‘qualitative’ in a negative way: qualitative parts of properties are those that do not contribute to the dispositions of objects that instantiate them” (Taylor 2018, 1438; emphasis added). Thus, it seems open to the Compound Theorist to define qualitativity negatively, and so the Dual Aspect Account might not necessarily be preferable on this count. It might be argued, though, that the Compound View needs to define qualitativity (or dispositionality) negatively in order to avoid collapsing into Identity Theory. However, the same might be said of the Dual Aspect Account, if indeed aspects are real things, as I suggested earlier. But at any rate, it is not clear why it even matters that qualitativity (or dispositionality) should not be defined negatively, or that the spirit of Identity Theory should be preserved. After all, neither the Dual Aspect Account nor Compound View depend on the identity of dispositionality and qualitativity.

The second reason is that the Dual Aspect Account is supposed to be more parsimonious than the Compound View. Whereas “aspects are no addition to being with respect to the properties of which they are aspects. . . . dispositional and qualitative parts are ontologically robust” (Giannotti 2021, 619–20). Dispositional and qualitative parts are

real parts of properties, but for Giannotti, “Aspects are not any kind of entities” (2021, 615). Giannotti’s reasoning, then, seems to be something like the following. All else being equal, on the Compound View, there are real properties and real property-parts, whereas on the Dual Aspect Account, there are just real properties (aspects are not entities). Thus, on the grounds of parsimony, the Dual Aspect Account should be preferred, since it posits fewer (types of) entities where the nature of properties is concerned.

However, even with considerations of parsimony, it is not obvious that the Dual Aspect Account is more parsimonious than the Compound View. Firstly, the Compound View might be *more* parsimonious than Giannotti thinks. A proponent of the Compound View can claim that a property is identical to its parts in the same way that any other mereological whole is identical to its parts.<sup>48</sup> Just as with mereological wholes, a property supervenes on its parts, but it is not something over and above its parts (arranged in a certain way)—it is not an ontological addition. However, just because a property is not an ontological addition to its parts, it does not follow that it is not real—it is real because it just is its parts, which are real. The result, then, is that a proponent of the Compound View can affirm that there are real properties, without thereby affirming anything in addition to real property-parts.

Secondly, the Dual Aspect Account is *less* parsimonious than Giannotti thinks. Recall that I have argued that Giannotti relies on an invalid inference for the claim that aspects are not entities at all. The aspects of a property might not be entities in addition to the property, but it does not follow that they are not entities at all. More positively, I also suggested that aspects should be considered *real* things, since they are the ways of being of real properties. With that in mind, property-parts should not be taken to be the

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<sup>48</sup> Note that this does not mean that Compound View is a version of Identity Theory. Identity Theory requires that a property’s qualitativity and dispositionality be identical to each other, and that each be identical to the property itself. On the Compound View, qualitativity and dispositionality are distinct parts, and neither *per se* is identical to the property itself, even if the property identical to them taken together.

ontologically robust counterparts of aspects.<sup>49</sup> Both aspects and property-parts, then, can be taken to be ontologically robust insofar as they are real, and in this regard the Dual Aspect Account should not be regarded as more parsimonious.

With these things in mind, we can view the choice between the Dual Aspect Account and the Compound View as a choice between two ontologies: respectively, one an ontology of real properties and real aspects, and the other an ontology of real properties and real property-parts. To simplify, excluding the supervenient entities (since they are not ontological additions anyway), it becomes a choice between an ontology of real properties and an ontology of real property-parts, respectively. But when described as such, it is not obvious that the Dual Aspect Account is more parsimonious than the Compound View, since both theories posit only one basic type of non-substantial entity (properties and property-parts, respectively) to explain the qualities and dispositions in the world.

Now, it might be objected that even though both theories posit only one basic *type* of non-substantial entity, the Compound View is less parsimonious with respect to both *sub-types* and *tokens* of the basic, non-substantial entity. For every property sub-type that a proponent of the Dual Aspect Account posits, the proponent of the Compound View will have to posit two property-part sub-types (one dispositional, one qualitative); *mutatis mutandis* for property tokens. However, this is arguably irrelevant when it comes to the issue of parsimony. What matters is not so much the number of sub-types or tokens, but their ontological content. And arguably, the ontological content of one property on the Dual Aspect Account is equivalent to the ontological content of two property-parts on the Compound View. A single property, on the Dual Aspect Account, contributes both powers and qualities to the object that possesses it, whereas it takes two property-parts, on the Compound View, to do the same thing. Thus, at least in this way, a single property on the Dual Aspect Account has twice as much ontological content as a single property-part on the Compound View. So even if the Compound View posits twice as many property-parts

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<sup>49</sup> I am assuming here that “ontologically robust” means “real.” To be sure, Giannotti does not define what he means by “ontologically robust,” but I suspect that he means (at least) “real,” especially given that he contrasts aspects (which he takes to be non-entities) with “ontologically robust” property-parts.

as the Dual Aspect Account posits properties, the ontological content of both theories is nonetheless equivalent, and hence, neither theory is more parsimonious in this regard.

Giannotti has argued that the Dual Aspect Account is preferable over the Compound View, for the reasons that it preserves the spirit of Identity Theory and that it is more parsimonious. I have tried to argue in this section that these reasons are unconvincing.

#### 4.5.2 Complexity and collapse

While the Dual Aspect Account does not seem to be more preferable than the Compound View, there is a deep problem with the theory which stems from the invalid inference that aspects are non-entities. If, as I have argued, aspects are real, then the ontological commitments of the Dual Aspect Account need to be reconsidered. However, there seem to be a number of ways to interpret the Dual Aspect Account in light of the reality of aspects, and as I hope to show, these multiple interpretations are problematic for the theory.

Recall that the central thesis of Identity Theory is this:

If  $P$  is an intrinsic property of a concrete object,  $P$  is simultaneously dispositional and qualitative . . .  $P$ 's dispositionality,  $P_d$ , is  $P$ 's qualitativity,  $P_q$ , and each of these is  $P$ :  $P_d = P_q = P$ . (Heil 2003, 111; cf. Giannotti 2021, 608)

This is a threefold identity: the identity of a property's dispositionality with its qualitativity, and the identity of both of these with the property itself. The Dual Aspect Account cannot affirm these identities in terms of aspects, lest it collapse into the Aspect Identity Theory, which does not really differ from the original Identity Theory. Nonetheless, there are several ways to reinterpret the Dual Aspect Account while maintaining its status as a Non-identity Theory of powerful qualities. Here are four reinterpretations of the theory.

Firstly, the Dual Aspect Account can be reinterpreted as a theory that maintains that *the dispositional and qualitative aspects of a property are identical to each other, but not to the property itself*. Even though the aspects are identical to each other, because they are not identical to the property itself, this reinterpretation does not count as an Identity

Theory. This reinterpretation requires that dispositional and qualitative aspects are not defined in a mutually exclusive way. It also means that the distinction between dispositional and qualitative aspects is a mere conceptual distinction. However, even if the distinction between dispositional and qualitative aspects is merely conceptual, this does not entail that aspects are not real.

The downside to this reinterpretation is that it is less parsimonious than both Identity Theory and the Compound View. This can be seen by considering the relationship between aspects and properties. In order to avoid collapsing into Identity Theory, the relationship cannot be one of identity—aspects and properties must relate to each other as distinct relata. On this reinterpretation, it might be said that aspects relate to properties in a way analogous to the way that properties are instantiated in objects. Just as objects are distinct (even if inseparable) from the properties that they instantiate, properties are distinct (even if inseparable) from their aspects. At any rate, if properties are distinct from their aspects, then this reinterpretation is less parsimonious than Identity Theory, which does not make a real distinction between a property, its dispositionality, and its qualitativity. This reinterpretation is even less parsimonious than the Compound View, which does not maintain that a property is something distinct from its dispositional and qualitative parts taken together.

Secondly, the Dual Aspect Account can be reinterpreted as a theory that maintains that *the dispositional and qualitative aspects are distinct, but a property is identical to its aspects*. This reinterpretation avoids being an Identity Theory, since it maintains that aspects are distinct from each other. However, it collapses the Dual Aspect Account into some form of the Compound View. If the reinterpretation entails that a property is simply identical to its aspects arranged in a certain way, then the result is no different from the Compound View. If the reinterpretation entails that a property is identical to its aspects plus additional elements, then the result is a more complex version of the Compound View (which is perhaps less parsimonious, depending on the ontological content of the additional elements).

Thirdly, another reinterpretation maintains that *aspects are distinct from each other, but only one is identical to the property itself*. This reinterpretation is a Non-identity Theory since it maintains the distinctness of aspects, even if only one aspect is identical to the property. This reinterpretation can collapse into a number of other views, depending on how it is specified. If, for example, one maintains that every property is identical to its dispositional aspect (even if some or all properties also have qualitative aspects), the view collapses into the Pure Powers View. If one maintains that every property is identical to its qualitative aspect (even if some or all properties also have dispositional aspects), the view collapses into (thick) Quidditism. If one maintains that some properties are identical to their dispositional aspect, while others are identical to their qualitative aspect, then the view collapses into Dualism.

Fourthly, a final reinterpretation maintains that *a property's aspects are distinct both from each other, and from the property itself*. This is like the first reinterpretation above, except that there is a real distinction between dispositional and qualitative aspects, and is thereby even less parsimonious.

In sum, since aspects should be thought of as real (even if they are not ontological additions to properties), the Dual Aspect Account needs to be reinterpreted to accommodate real aspects. There are several reinterpretations of the theory which accommodate real aspects but which are also Non-identity Theories of powerful qualities. The problem, though, is that these reinterpretations are either less parsimonious than Identity Theories, or else collapse into other theories of properties. The Dual Aspect Account, according to Giannotti, is supposed to be a novel and ontologically lightweight theory of powerful qualities. However, as it turns out, it either collapses into other established views, or if it is novel, it is more ontologically robust than originally supposed.

The proponent of the Dual Aspect Account has at least a couple ways to respond. He can, for example, provide a reinterpretation that accommodates real aspects but also avoids the above problems. At the moment though, it is not clear what that is supposed to be. Otherwise, he can show that aspects are not entities. But as discussed earlier, just because

aspects are not extra entities, it does not follow that they are not entities at all. Further argument is required to show that they are not entities at all. However, the trouble is that if aspects are not real, the distinction between dispositional and qualitative aspects becomes merely conceptual, and the Dual Aspect Account fails to be a novel, alternative, *ontological* theory of powerful qualities.

## 4.6 Conclusion

I have tried to show in the foregoing discussion that Giannotti's notion of aspects, as it stands, is not a useful way for interpreting the theory of powerful qualities. Having clarified the nature of aspects (that if it is true that properties have aspects, then aspects should be considered entities), then the Powerful Qualities Theorist has the following tasks if he wishes to develop a theory of powerful qualities in terms of aspects. On the one hand, if one wishes to develop an Identity Theory in terms of aspects, one must provide an account of aspects that provides a deeper explanation of dispositionality and qualitativity than does the original Identity Theory. It would also be to the theory's advantage if its notion of aspects allows it to avoid or satisfy the problems to which Identity Theory is vulnerable. On the other hand, if one wishes to develop a Non-identity Theory in terms of aspects, one must provide an account of aspects that justifies property complexity and avoids theory collapse.



## Chapter 5

### 5 Are Powerful Qualities Pure Powers?

Taylor (2018) has argued that there is no substantive difference between Identity Theory and the Pure Powers View, and that the debate between the two rests on an illusion. He contends that “Contrary to appearances, both views accept the same ontology of properties” (Taylor 2018, 1424-5). His reasons for this position are that (1) Pure Powers Theorists can accept what Identity Theorists mean by “quality”; and that (2) Identity Theorists can accept what Pure Powers Theorists mean by the “purity” of powers. One consequence of this identity is that, as with the Pure Powers View, Identity Theory is susceptible to a particular regress problem.

One advantage of Identity Theory is that it is supposed to avoid problems associated with Quidditism on the one hand, and on the other hand, problems associated with the Pure Powers View. If Taylor is correct, then the Identity Theorist cannot recommend the Powerful Qualities View over and above the Pure Powers View on account of this supposed advantage. If both views of properties turn out to be the same, then Identity Theory does not avoid the problems of the Pure Powers View, but is rather susceptible to them.

Although I agree with Taylor in important respects, it is not clear that his argument adequately supports his conclusion. In section 5.1, I will discuss Taylor’s argument that pure powers are also qualities in the various senses used by Powerful Qualities Theorists. While I agree with Taylor that Pure Powers Theorists can accept that properties are “qualitative” in several senses used by Identity Theorists, I disagree with respect to the thick quiddistic sense of qualitativity assumed by the Truthmaking View (Jacobs 2011). However, I do not think that this undermines his argument. In section 5.2, I will discuss Taylor’s argument that powerful qualities are also pure powers. Here I agree with Taylor that both Pure Powers Theorists and Identity Theorists agree regarding the purity of powers. I note here, though, that the significant point of contention that Identity Theorists have against pure powers isn’t the notion of purity *per se*, but of purity plus a certain

notion of power. In section 5.3, I discuss a missing step in Taylor's argument, and I explain why there is some doubt as to whether Identity Theorists use the same notion of power as Pure Powers Theorists (even if they share the same notion of purity). The crucial point here is whether intentionality should be considered a relation. The chapter concludes in section 5.4.

## 5.1 Notions of Quality

It is a surprising claim that Identity Theory and the Pure Powers View are ultimately the same theory. Identity Theorists distinguish their theory from the Pure Powers View by maintaining that properties are not only powers, but that they are also *qualities*. They claim that there is more to the nature of properties than their being powerful. In light of this, Taylor clarifies the different ways the term "quality" has been used by various Powerful Qualities Theorists, and he tries to explain why Pure Powers Theorists can accept that pure powers are "qualitative" in these senses. This section discusses the various notions of quality that Taylor discusses. While most of these notions Pure Powers Theorists can accept, Taylor is incorrect to claim that they can also accept Jacobs' notion of quality as being a thick quiddity.

### 5.1.1 Quality as categorical/actual/real being

On one definition, "quality" means "categorical" in the sense of being "actual" or "real." This type of definition is assumed by Strawson (2008), and being Dispositional Realists, Martin and Heil can also affirm that properties are "qualitative" in this sense. However, this meaning of quality is readily accepted by Powers Theorists of all stripes, whether proponents of Property Dualism, pure powers, or powerful qualities. This definition does not distinguish Identity Theory from the Pure Powers View.

### 5.1.2 Examples of qualities

Shape and colour properties, for Heil, are "paradigmatic qualities" (2012, 57; cf. Heil 2003, 113; Martin and Heil 1999, 46). However, as Taylor points out, examples themselves cannot provide a notion of quality that distinguishes Identity Theory from the

Pure Powers View. This is especially clear considering that even Pure Powers Theorists accept the existence of shape and colour properties.

### 5.1.3 Quality as concept

Taylor also considers the conceptual distinction between the qualitative and the powerful. He notes Martin and Heil's use of the Lockean idea of partial consideration, and how on Identity Theory, a property's qualitativity and dispositionality are different ways of considering the whole property, much like viewing a picture of a rabbit-duck. Just as a rabbit-duck can be seen as a rabbit or as a duck, a property can be considered as a quality or as a power. Strawson also admits that "There's . . . a seemingly respectable conceptual (if ultimately metaphysically superficial) distinction between an object's categorical and dispositional properties" (Strawson 2008, 274). While a conceptual distinction already assumes some definition of "quality" (and "power"), Taylor emphasizes that we can grasp, think about, or refer to properties in dispositional and non-dispositional (i.e., qualitative) terms. Sphericity, for example, can be understood in dispositional terms (e.g., as the property that disposes objects to roll, reflect light in a certain way, etc.), or in non-dispositional terms (e.g., the property that an object possesses just in case it is a three-dimensional object such that every point on its surface is equidistant from its centre). Chemical compounds, another example, can also be understood in dispositional terms (e.g., in terms of the ways they are disposed to react with other chemicals), or in non-dispositional terms (e.g., by way of their composition and structure). With this in mind, the Identity Theorist might think that powerful qualities can be grasped, thought about, or referred to in both dispositional and non-dispositional terms, but that pure powers can be understood only in dispositional terms.

But as Taylor points out, that we can grasp, think about, or refer to properties in non-dispositional terms is consistent with their being pure powers. After all, the Pure Powers View is an *ontological* theory of properties, and as such, it can countenance non-dispositional *descriptions* of powers. Bird even admits that "dispositional and non-dispositional expressions may co-refer" (Bird 2012, 729). And Shoemaker, one of the first proponents of the Pure Powers View, has said,

it seems plain that predicates like “square,” and “round” and “made of copper” are not dispositional . . . There are causal powers associated with being made of copper . . . But presumably this association is not incorporated into the meaning of “copper.” (Shoemaker 1980, 232)

Even though Pure Powers Theorists make an ontological claim about the nature of properties, they can still accept a merely conceptual notion of “quality.” Thus, qualitativity as a concept does not distinguish Identity Theory from the Pure Powers View.

#### 5.1.4 Quality as thick quiddity

Taylor next considers the notion of “quality” involved in Jacobs’ Truthmaking View. On the Truthmaking View, to be a quality is to be identical to a thick quiddity. Insofar as it is a *thick* quiddity, it is a qualitative nature or *quale*, the sort of thing with which “The phenomenologically minded may think . . . we have a direct acquaintance” (Armstrong 1997, 169; quoted in Jacobs 2011, 92).<sup>50</sup> Not only are thick quiddities qualitative natures, but different quiddities will differ in qualitative character. “Thick quiddities differ from each other, not merely numerically, but by nature” (Jacobs 2011, 90). A thick quiddity is a property that has “its own nature” (Armstrong 1989, 59; quoted in Jacobs 2011, 90), such that to encounter a thick quiddity is “emphatically not to have encountered them all” (Armstrong 1997, 168; quoted in Jacobs 2011, 91).

Taylor thinks that Pure Powers Theorists can accept that properties are qualities in the thick quiddistic sense, because they can affirm of pure powers that “they differ from each other, not merely numerically, they have their own nature, and to encounter one is not to encounter them all” (2018, 1427). While he is correct to claim that Pure Powers Theorists can affirm these things, that these things are true of pure powers is not enough for them to count as qualities in the thick quiddistic sense. Thick quiddities, while they are indeed distinct natures, they are also *quiddities*, and hence, they are also intrinsically individuated properties. Taylor does not discuss this aspect of thick quiddities, but a Pure Powers Theorist cannot accept that properties are individuated intrinsically, since properties, for the Pure Powers Theorist, are individuated extrinsically, by their relations

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<sup>50</sup> By contrast, *thin* quiddities are bare (non-qualitative) properties.

to stimulus and/or manifestation properties. While Pure Powers Theorists can accept that properties are thick (insofar as they have distinct natures), they cannot accept that they are quiddities. Thus, contrary to Taylor, they cannot accept that pure powers are also qualitative in the thick quiddistic sense.

To be sure, Jacobs does not explicitly discuss the individuation of properties as thick quiddities in his 2011 article, but there is reason to think that his view involves the intrinsic individuation of properties. For one, he specifically identifies qualitativity with being a thick *quiddity*. He could have defined qualitativity in non-quiddistic terms, but he does not. He instead defines qualitativity in quiddistic terms, and quiddities are individuated intrinsically.<sup>51</sup> Moreover, he explains his view by quoting Armstrong, whose own versions of Quidditism require the intrinsic individuation of quiddities. And finally, even though the Truthmaking View is a Powerful Qualities View, it is possible for a thick quiddity to be both intrinsically individuated and powerful in Jacobs' sense of power (i.e., as being a nature sufficient to be part of a truthmaker for causal counterfactuals).

Given that Pure Powers Theorists cannot accept that properties are thick quiddities, what does this mean for Taylor's thesis, that Identity Theory and Pure Powers Ontology are identical ontologies? Well, if the Truthmaking View were a kind of Identity Theory, then it would be an instance of Identity Theory that is not also a Pure Powers Ontology (because of its notion of qualitativity as thick quiddity). In this case, the Truthmaking View would be a counterexample to Taylor's thesis. However, I do not think that it is a kind of Identity Theory. While the Truthmaking View is a kind of Powerful Qualities View, I do not think that it should be considered a kind of Identity Theory. Identity Theory requires that a property's qualitativity and dispositionality be identical to each other. However, I do not think that this is the case for the Truthmaking View, since on the view, a property's qualitativity (i.e., its being a thick quiddity) explains its dispositionality (i.e., its being a nature sufficient to be part of a truthmaker for causal counterfactuals), and not vice versa, so they cannot be identical (see chapter 2.3.1 and 2.5.1). So, even if

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<sup>51</sup> To be more precise, while qualitative and non-qualitative quiddities are individuated intrinsically, only non-qualitative quiddities are individuated by bare numerical identity.

Taylor is incorrect to think the Pure Powers Theorists can accept that properties are thick quiddities, this does not really undermine his argument.

In summary, with the exception of the thick quiddistic sense, the notions of quality discussed so far can all be accepted by the Pure Powers Theorist. This points to the general need for Identity Theorists to refine their notions of quality. In order to be distinguishable from the Pure Powers View, Identity Theory requires a notion of quality that is more robust than what Identity Theorists have come up with so far.

## 5.2 Notion of Purity

So far I have discussed Taylor's surprising claim that Pure Powers Theorists can accept that pure powers are also qualities, and I have tried to argue that he is incorrect with respect to the notion of quality as being a thick quiddity. Another one of Taylor's surprising claims is that Identity Theorists can accept that powerful qualities are also pure powers. While Identity Theorists already accept that properties are powers, what is significant is that Taylor argues that they are *pure* powers. This is especially surprising since Identity Theorists deny this. Heil, for example, dedicates a whole chapter arguing against a version of the Pure Powers View (Heil 2003, ch. 10; see also Martin 2008, 61–2). Jacobs (2011) also criticizes the Pure Powers View in favour of Identity Theory, and Strawson (2008) has argued that there cannot be dispositional being without categorical being.

Pure Powers Theorists, of course, think that properties (or at least the fundamental ones) really are pure powers (Bird 2007a), but as Taylor notes, what exactly “pure” means is ambiguous. Pure Powers Theorists have described properties as “nothing more” than powers (cf. Mumford 2004, 185) and that the powerfulness of a property “exhausts its being” (cf. Bird 2007b, 100), but these descriptions need explanation. To be as precise and clear as possible, Taylor considers several interpretations of “purity.” He considers two extreme (and hence, implausible) interpretations, since the ambiguity of the term “purity” invites these interpretations. One such interpretation is that a power is “pure” when it is not also a quality in the ontological sense of “quality” (i.e., as real or actual being). Thus, on this interpretation, a pure power is not a real or actual thing at all. This

comes as no surprise since powers have been taken to be “potential”/“possible” properties, in contrast to “real”/“actual”/“categorical” properties. However, this is an implausible interpretation since Powers Theorists in general affirm the reality of powers. The other extreme interpretation of the “purity” of powers is that properties can be described accurately *only* in dispositional terms. But as noted above, even Pure Powers Theorists can accept that properties can be accurately described in non-dispositional terms. Neither of these extreme interpretations is what the Pure Powers Theorists mean by “purity.”

Instead, Taylor thinks that the most plausible interpretation of the “purity” of powers is this: “that the whole nature of a property is powerful: all of it is powerful and there is no part of a property’s nature that is non-powerful” (Taylor 2018, 1433). This, according to Taylor, is what Pure Powers Theorists mean by “*pure powers*.”<sup>52</sup> He also notes that because Identity Theorists claim that properties are identical to powers, they “must also say that the whole nature of a property is powerful, and that there is no part of a property’s nature that is non-powerful” (Taylor 2018, 1434). The Identity Theorist also claims that a property is a quality, but because a quality is identical to a power, the quality itself is powerful. Furthermore, Identity Theorists deny that the qualitativity and powerfulness of a property are its parts or aspects. Thus, an Identity Theorist cannot claim that only part of a property is powerful. A property, then, on Identity Theory must be wholly powerful. Thus, on Taylor’s interpretation of “purity,” properties on Identity Theory turn out to be pure powers.

Taylor is correct in his assessment that the powerful qualities of Identity Theory are also pure powers, in the sense that they are wholly powerful. Identity Theorists can readily accept this too, especially since their view is not only consistent with, but entails wholly powerful properties. Nonetheless, it is a fact that Identity Theorists have opposed the Pure Powers View. But if Identity Theory entails the purity of powers, why the opposition? Is the opposition the result of Identity Theorists’ failure to recognize the ontological

<sup>52</sup> It might be wondered whether there are there any complex properties that might serve as counterexamples to Taylor’s claim (thanks to Robert DiSalle for the idea). However, I am doubtful that any complex property will be of use in distinguishing Identity Theory from the Pure Powers View. Identity Theory claims that all intrinsic properties are powerful qualities, without making a distinction between simple and complex intrinsic properties.

implications of their view? This does not seem to be the case. Instead, their rejection of the Pure Powers View is not so much a rejection of the notion of purity *per se* (as Taylor defines it), but of the conjunction of purity *plus* a certain notion of power. Setting aside the issue of purity, Identity Theorists tend to conceive of powers differently than do Pure Powers Theorists. Pure Powers Theorists typically think of the nature or essence of powers as extrinsic, as involving (at least in part) relations to other properties, and according to Identity Theorists, this is problematic if properties are also pure. Identity Theorists, though, claim to reject the extrinsic essences of powers, preferring a notion of power that involves intentionality. Arguably, by using different notions of power, Identity Theory might be able to resist the collapse into the Pure Powers View, even if the views share the same notion of purity.

### 5.3 Notions of Power

Taylor's argument is meant to show that Identity Theory and the Pure Powers View are the same ontology. To this end, he has argued that Identity Theorists and Pure Powers Theorists can agree in their notions of qualitativity and purity. He has argued that Pure Powers Theorists can accept the different ways in which Identity Theorists have conceived of qualitativity. While I have tried to show that, *pace* Taylor, Pure Powers Theorists cannot accept the thick quiddistic notion of qualitativity (but this does not, I argue, affect his argument), I agree with Taylor that the other notions of qualitativity are too weak to distinguish Identity Theory from the Pure Powers View. I also agree with Taylor that Identity Theorists can accept what Pure Powers Theorists mean by "purity."

Now, my minor qualm aside, Taylor argues that, given that Identity Theorists and Pure Powers Theorists can agree on qualitativity and purity, Identity Theory and the Pure Powers View are identical ontologies. He then draws out an important consequence of this identity, namely, that Identity Theory, like the Pure Powers View, suffers from a particular regress problem. He makes this inference, not to show that the regress problem is fatal against Identity Theory, but only that it is no less a problem for Identity Theory than it is for the Pure Powers View. However, I think that his argument is missing a step. He also needs to show that Identity Theorists and Pure Powers Theorists agree on the same notion of power. It is not clear, though, that this is the case.



### 5.3.1 Regress of powers

On the Pure Powers View, the nature or essence of a (fundamental) property is “exhausted by” or “nothing more” than its dispositionality, where dispositionality is defined in terms of a property’s relations to other properties (viz., stimuli and manifestations). In describing powers, Bird, for example, writes:

Thus we should expect the essence of a property, its dispositional character if it is an essentially dispositional property, to determine the identity of the property. According to the Dispositional Essentialist, therefore, the essence of such a property is determined by its relations to other properties. . . . if one is a Dispositional Monist then those other properties also have dispositional essences. (Bird 2007b, 524)

Elsewhere he defines a pure power as a property that can be characterized “as a relation between a stimulus and a manifestation” (2007a, 22). Similarly, Mumford writes that “the essence and identity of a property are determined by its relations to other properties. To be F is only to bear certain relations to all other properties, G, H, I, and so on” (2004, 185). On the Pure Powers View, then, the dispositionality of a property—that is, its relations to other properties—is sufficient to fix its identity or to individuate it.

Now, if the essence or identity of properties is nothing other than relations to other properties, several regress problems arise.<sup>53</sup> The one relevant to the present discussion, and the one that Taylor discusses in his article, is the one formulated by Lowe (2006), pertaining to the individuation of properties. Lowe writes:

each power is the very property that it is at least partly in virtue of being a power for a certain kind of manifestation. But if all properties were powers, then all *manifestations* of powers—being properties of their bearers—would themselves be powers, likewise ‘getting their identity’ from *their* manifestations. . . . The problem, rather, is that *no property can get its identity fixed*, because each property owes its identity to another, which in turn owes *its* identity to yet another

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<sup>53</sup> Swinburne (1980) has developed an epistemological version of the problem, and Armstrong (1997) an ontological version, but Lowe’s (2006) individuation regress will be the main focus of the present discussion. For a discussion of all of these from the perspective of a Pure Powers Theorist, see Bird (2007a, 2007b). See also Bigaj (2010), Ingthorsson (2012), and Kodaj (2020).

—and so on and on, in a way that, very plausibly, generates either a vicious infinite regress or a vicious circle.<sup>54</sup> (Lowe 2006, 138)

If, as the Pure Powers View affirms, properties are wholly their relations to other properties, which are nothing other than relations to yet other properties, and so on, then “no property can get its identity fixed.”

According to Taylor, this regress problem is also a problem for Identity Theory, since Identity Theory, like the Pure Powers View, affirms that properties are wholly dispositional. However, this conclusion follows only if Identity Theorists also think of property identity in terms of relations to other properties. As we shall see, though, it is not obvious that Identity Theorists think so—at least if we take seriously the claim that intentionality is not a relation.

### 5.3.2 Powers on Identity Theory

In contrast to Pure Powers Theorists, Martin and Heil have explicitly denied that powers are relational in essence. Nonetheless, they believe that there is an intimate connection between powers and their manifestations. But if powers are not relations, in what sense are they “connected” to their manifestations? And how are they individuated? When it comes to the “connection,” Martin and Heil make use of the notion of intentionality or directedness.<sup>55</sup> In order to better understand this notion of intentionality with respect to

<sup>54</sup> Here Lowe discusses the problem in terms of single-track powers whose identities are determined by their relations to their manifestations. But the problem easily applies to multi-track powers, and powers whose identities are determined by their relations to their stimuli as well as their manifestations.

<sup>55</sup> Some clarification is needed here. In a co-authored paper, Martin argued that there is a distinction between (mental) intentionality and (physical) dispositionality (Martin and Pfeifer 1986). He discussed how certain theories of intentionality fail to distinguish between intentionality and dispositionality. They fail to do so if intentionality is defined in such a way so as to have any subset of the following features as a sufficient condition: (1) directedness (discussed in main body); (2) intentional inexistence (also discussed in main body); (3) lack of truth import (e.g., that I hope it is snowing and that I hope it is not snowing, neither imply that it is snowing or that it is not snowing); (4) referential opacity (e.g., just because I believe that Plato is the author of *The Republic*, it does not follow that I believe that the author of *Phaedo* is the author of *The Republic*); and (5) indeterminacy (e.g., I can have a desire to travel, even if I do not have a desire to travel to a particular place) (cf. Mumford 1999). The problem is that these features are also applicable to dispositions, and the danger is that the conflation of intentionality and dispositionality will lead to animism, the attribution of mentality to purely physical dispositions. Martin avoids characterizing dispositions as intentional, preferring instead to talk about them only in terms of directedness. However, I use “intentionality” as a more general term, involving only directedness and intentional inexistence, applying to both mental and physical cases, without attributing mentality to the latter. In this sense, my use of “intentionality” is more in line with Heil, who thinks that dispositions have the “mark of intentionality” insofar as they have directedness toward non-exis-

powers, it will be helpful to first consider intentionality with respect to mental intentionality, since both types of intentionality are very similar in important respects. In particular, two features of mental intentionality that are most relevant for the present discussion are *directedness* and *intentional inexistence*.<sup>56</sup> The directedness of mental states refers to the fact that mental states can be *for*, *about*, or *directed* beyond themselves, toward certain things or states of affairs. I can have a memory, for example, about the Credit River, or a desire for moving to Tokyo. As for intentional inexistence, this refers to the fact that mental states can be about things or states of affairs that do not actually exist or obtain. I can imagine, for instance, a blue serpentine dragon, or I might have hoped that Japan would win the 2022 World Cup (even though they did not). When it comes to the intentionality of powers, powers have features similar to mental states. Firstly, just as mental states can be directed toward certain things or states of affairs, so too are powers directed toward certain manifestations (Martin 2008, 59–61; Heil 2003, 122–4). A power will manifest a certain way under certain circumstances, but not in another way under the same circumstances. A key, for example, is able to open certain locks, but not others, and a block of sodium will explode, rather than freeze, when exposed to water. Secondly, just as mental states can be directed toward non-existent objects, so too can powers be directed toward certain manifestations which may never occur. A power might not ever come under the right circumstances in which it would

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tent objects (Heil 2003, 221). When I talk about intentionality with respect to Martin's view, I have this sense in mind, rather than a stronger conception which involves, for example, an essential experiential element (cf. Martin and Pfeifer 1986, 552). I do not intend to (implicitly or explicitly) attribute animism to Martin or Heil.

<sup>56</sup> Place takes the conjunction of directedness and intentional inexistence, plus indeterminacy, as the criterion for dispositionality in general (not just intentionality), applying to both mental and physical dispositions (1996b, 119). Mumford (1999) argues that by doing so, Place risks animism, or even panpsychism (since Place thinks that dispositions are ubiquitous). Place, however, rebuts the charge, pointing out that he did not offer his criterion as a way to distinguish the mental from the non-mental (1999, 227). He argues, rather, that his criterion is justified given our characterizations of dispositions in terms of manifestations that might not exist (1999, 226). It might be helpful to consider my use of the term "intentionality" in a similar way, not as criterion for distinguishing between the mental and non-mental, but as a way to distinguish the dispositional from the non-dispositional. Given this interpretation of "intentionality," further criteria are required to distinguish the mental from the non-mental. Martin and Pfeifer, for example, identify an essential experiential element as a mark of the mental (1986, 552). For Place (1996b, 116–17; 1999, 227), mental dispositions are those whose manifestations are controlled by a negative feedback system in complex biological organisms. And while not directly related to the task of formulating a criterion to distinguish between the mental and non-mental, Heil thinks that dispositionality, insofar it preserves the mark of intentionality (as directedness and intentional inexistence), can provide a foundation for mental intentionality (2003, 221).

manifest, and so it never manifests. A key may be able to open a certain lock that will never be made, and a particular block of sodium might never be exposed to water and subsequently explode.

Now, besides directedness and intentional inexistence, there is one disputed issue regarding mental intentionality that needs to be considered, especially as it pertains to understanding powers on Identity Theory. This issue is whether or not intentionality is a relation. For mental intentionality, because the directedness of a mental state seems to involve something outside of itself (e.g., my thought about Tokyo Tower seems to involve Tokyo Tower itself), one might think that mental intentionality is a relation. However, the issue is complicated by the problem of intentional inexistence: how can a mental state stand in an intentional relation to something that does not exist? One answer is to say that cases of intentional existence really are relations to real things, just not to anything concrete. My imagining a blue dragon, for example, involves a relation to, say, some real but abstract *possibile*, or my own mental concept or image of a dragon. However, the phenomenon of intentional inexistence has led some philosophers to theorize that mental intentionality is *not* a relation at all. Some philosophers have tried to expound this idea in adverbial terms, where representational mental states about objects or states of affairs (existent or non-existent) are just instances of mental states configured or acting in a certain way, which can be verbally captured by the use of adverbs (see Horgan and Tienson 2002; Loar 2002; Kriegel 2007). Described as such, mental states can represent objects without requiring a relational component, and as such, this theory of intentionality avoids the problem of intentional inexistence. In cases of intentional inexistence, mental states represent non-existent objects by way of their intrinsic features (e.g., by their phenomenal character which can be described adverbially). When I am imagining a blue dragon, it is not that I am standing in a relation to another object, such as a *possibile* or mental image, but rather, I am imagining blue-dragonly. When I had hoped that Japan would win the World Cup, I was hoping Japan-wins-the-World-Cuply. These mental states are about particular things (e.g., blue dragons) and states of affairs (e.g., Japan's winning the World Cup) not by way of a relation to these particular things and states of affairs, but by way of their phenomenal characters, which are picked out by the (contrived) adverbs "blue-dragonly" and "Japan-wins-the-World-Cuply."

While Martin and Heil do not have a corresponding adverbial account of powers, for similar reasons they think that the intentionality of powers is non-relational. Because powers can exist without ever manifesting, they think that the nature of powers does not involve any relations to their manifestations. Martin writes:

Dispositions are actual, although their manifestations can fail to be. It is an elementary confusion to think of unmanifesting dispositions as unactualized *possibilia*, although that might serve to characterize unmanifested manifestations. As such, a disposition cannot be a relation to a manifestation. (Martin 2008, 12)

Notice that for Martin, not only are powers not relations to actual manifestations, but they are not relations even to manifestations as *possibilia*. Heil thinks the same, writing:

There is, I believe, no compelling reason to regard dispositions . . . as relational. Dispositions can be conditionally characterized in a way that invokes their actual or possible manifestations. But this does not turn dispositions into relations. The existence of a disposition does not in any way depend on the disposition's standing in a relation to its actual or possible manifestations or to whatever would elicit those manifestations. (Heil 2003, 83)

Furthermore, like the adverbial account of mental intentionality, the directedness of powers is explained by their intrinsic features. A key, for example, can be ready to open locks that do not exist, and this readiness is in virtue of its intrinsic features (e.g., shape, rigidity), and not because of the existence of certain locks (see Heil 2003, 122-4). Similarly, a block of sodium is ready to explode when exposed to water not because of the existence of any bodies of water, but because of its chemical composition.

The connection, then, on Identity Theory between a power and its manifestations involves a type of intentionality similar to that of mental states. It is one where a power is directed toward its manifestations, yet is non-relational. Just as mental states are directed toward other things or states of affairs, powers are also directed toward other things, namely, their manifestations. Just as mental states can be directed toward non-existent things, so too powers can be directed toward manifestations that do not (or will not ever) exist. And because powers can be directed toward non-existent manifestations, their connection to manifestations, according to Martin and Heil, is not relational.

When it comes to the individuation of powers, Martin appeals to this notion of intentionality. Powers, for Martin, are vastly multi-track: a single power is directed toward an infinite number of manifestations. He further suggests that a power's directedness toward a certain manifestation can be thought of as a dispositional line, and thus, a power can be thought of as a power net or web, consisting in an infinite number of these lines. "Dispositions differ just in case their disposition lines differ" (Martin 2008, 29), and so the same dispositions will have the same disposition lines. A power, then, is individuated on the basis of its *for-ness* or *directedness* toward certain manifestations. And again, because of its intentional nature, directness does not require any actual stimulus (or "reciprocal disposition partner," in Martin's preferred terminology) or manifestation.

Heil adds to this the idea that qualities are also necessary for the individuation of powers. It is not enough that powers are individuated on the basis of what they are for. As Heil writes, "qualities play a central role in the identity and individuation of powers. Strip away the qualities, and it is no longer clear what, if anything, you are talking about" (2012, 71). Here Heil is responding to the idea of a purely relational universe, where objects consist wholly in their relations to one another, and are devoid of intrinsic, qualitative natures. Because objects in such a universe lack qualities, the relations themselves cannot be distinguished from one another.<sup>57</sup> Heil observes that this is the same problem for pure powers (2012, 70–71). Without qualities, powers cannot be individuated from one another.

The total picture, then, on Identity Theory is that a power is directed toward an infinity of manifestations, and it is individuated on the basis of its directedness (or disposition lines) toward these manifestations. Powers are identical in type just in case they have the same directedness (or disposition lines). Furthermore, powers must (at some point) be directed toward qualities if they are to be individuated from other powers. Now, while this view of

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<sup>57</sup> Holton (1999) describes a universe containing only four objects, A, B, C, and D, and each is wholly constituted by their relations to other objects. *A*, for example, is directly to the left of *B* and directly above *C*. Heil's contention is that relations such as being-to-the-left-of and being-directly-above cannot be distinguished from one another unless objects also have intrinsic qualities.

powers is vulnerable to an epistemic individuation problem,<sup>58</sup> it at least avoids Lowe's individuation regress. That regress requires that powers be relational in nature, but if Martin and Heil are correct in affirming the non-relational nature of powers and their directedness, then the problem is avoided. However, it might be said that there is a version of the regress to which Identity Theory is still vulnerable. By substituting intentionality for relations between powers, it might be objected that if a power is nothing other than its directedness toward other powers, which are nothing other than their directedness toward further powers, and so on, then still "no property can get its identity fixed." This regress is preempted, though, by Heil's requirement of qualities for the individuation of powers. However, the assumption here is that a quality is (at least in part) something more than just directedness toward other properties (an objection to this assumption will be discussed shortly).

A couple of things may be said in response to Martin and Heil's notion of power. Firstly, one might argue that intentionality should be interpreted as a relation. When it comes to intentionality in the context of mental states, there is much literature in the philosophy of mind, and it is beyond the scope of this chapter to adjudicate on the matter. However, it will suffice to note that one view is that in cases of mental states about non-existent entities, intentionality is a relation between the mental state and abstract *possibilia* or Meinongian objects. Similarly, it might be said that in the case of powers, their directedness toward manifestations is a relation between the powers and their manifestations as *possibilia* or Meinongian objects. Of course, Martin and Heil have been explicit in denying that this is the case (see Martin 2008, 12; Heil 2003, 122–4). It is not the aim of this section to prove them wrong, but it is enough to identify this as one area for a potential attack. If it can be shown that intentionality is actually a relation, then Identity Theory is one step closer to collapsing into the pure powers view.<sup>59</sup>

<sup>58</sup> Given that powers, for Martin and Heil, are individuated on the basis of the infinity of manifestations they are directed toward, it is impossible for a human to state the identity conditions of any one power. But even if the essence of a power cannot be identified, at least distinct powers can be distinguished from each other insofar as "distinct kinds of disposition cannot have, under exactly the same conditions, exactly the same kinds of manifestation" (Martin 2008, 140).

<sup>59</sup> Even if intentionality is a relation, Identity Theory might try to distinguish itself from the pure powers view by maintaining that properties are individuated intrinsically in *addition* to being individuated extrinsically (in relation to stimulus and/or manifestation properties). That is, an Identity Theorist might maintain that powerful qualities, but not pure powers, have overdetermined identities. However, it is

Secondly, even if intentionality is not a relation, Identity Theory might still be vulnerable to an individuation regress. Heil tries to stop the regress by appealing to qualities for individuating powers, but this might not be a viable strategy given the identity of powers and qualities. Taylor identifies this as a problem for Identity Theory, writing:

Whatever else is true of qualities, on the Identity Theory, qualities ultimately are dispositionalities (because they are identical with them). But the whole problem of individuation arose precisely because (according to the individuation problem) dispositionalities are simply ill equipped to fix the identity of properties. So, saying that qualities fix the identity of a property cannot help the Identity Theorist. (Taylor 2018, 1437)

While Taylor discusses powers in the relational sense, the same things may be said, *mutatis mutandis*, about powers that are intentional in nature. Heil's appeal to qualities for individuating powers stops the individuation regress only if qualities are something more than an infinity of directedness. But if powers consist in nothing but directedness for certain manifestations (as Martin portrays them), and if qualities are identical to powers (which Identity Theory affirms), then qualities consist in nothing but directedness for certain manifestations. It seems, then, that qualities are not sufficient to stop the individuation regress. At the very least it is not clear that they do, so more discussion is required as to what a quality or qualitativity is, and how it can prevent the regress. And whatever a quality is, it must also be possible for it to be identical with a power. While Martin and Heil have explained at length the notion of dispositionality, they do not devote a comparable amount of discussion to explain qualitativity. Here, again, is a reminder for Identity Theorists to precisely formulate a robust and adequate notion of qualitativity.

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not clear how an Identity Theorist can explain how this is possible. If a property is wholly a power, and powers are individuated in relation to other powers, how is it also individuated intrinsically? To be sure, Williams (2019), a Powerful Qualities Theorist, thinks that a property's identity is overdetermined—once by its qualitativity, and again by its dispositionality. However, Williams also thinks that properties are complex, as he identifies the qualitative character and dispositional profile of a property as separate parts. It is the real distinction between qualitativity and dispositionality that allows for the overdetermination of identity. The Identity Theorist, though, does not make the distinction, so how, then, can a property have an overdetermined identity on Identity Theory?



To be sure, this second objection, if successful, shows only that Identity Theory is vulnerable to a version of the individuation regress. Insofar as it is vulnerable to this regress, it is *similar* to the pure powers view, without thereby being identical to it. Provided that they use genuinely different notions of power, further argument is needed to show why the two ontologies are identical. One way to do this is to defend a view of pure powers characterized in terms of intentionality (taken as a non-relational “connection” between properties). As far as I can tell, the pure powers view does not require that powers be characterized by relations, only that they are intrinsically causal or modal properties. However, even if such a view is possible, it shows only that some version of Identity Theory is indistinguishable from some version of the pure powers view, which is weaker than Taylor’s original thesis.

In sum, it can be argued that Identity Theory and the pure powers view are different ontologies because they use different notions of power. Identity Theory involves a notion of power that is intentional in nature, and properties on the view are individuated not only by intentionality but by qualitativity as well. The pure powers view, on the other hand, involves powers which are relational in nature, and which are individuated on the basis of these relations. However, one can defend Taylor’s thesis by showing that intentionality really is a relation, and as a result, Identity Theory collapses into the pure powers view (assuming that the theories also agree on their notions of quality and purity). One can also defend a version of the pure powers view that involves an intentional notion of powers, but this would only go so far as to show that there is no real distinction between Identity Theory and *some* versions of the pure powers view (again, assuming agreement on the notions of quality and purity).

## 5.4 Conclusion

It is not obvious that Identity Theory and the Pure Powers View are the same ontology. When it comes to the notion of purity, both Identity Theory and the Pure Powers View appear to be in agreement—both theories affirm that properties are wholly powerful. And setting aside the thick quiddistic notion, Identity Theory and the Pure Powers View also seem to agree on qualitativity. However, when it comes to dispositionality, it is not clear to what extent both theories agree. The Pure Powers View involves the relational

individuation of powers, whereas Identity Theory involves intentional individuation, but it is not immediately obvious whether intentionality is a kind of relation. It is not clear, then, that Taylor has established his conclusion.

To be sure, whether or Taylor has established his conclusion, his argument brings attention to an important lesson for Identity Theorists. As mentioned a couple of times already, Identity Theorists must develop a robust notion of quality so that Identity Theory can be distinguished from the Pure Powers View. The challenge, though, is to come up with a theory that does just that, but that is also coherent (since qualities, for the Identity Theorist, must also be identical to powers) and adequately accounts for what a quality is. Even if it is unclear whether Identity Theory is in fact indistinguishable the Pure Powers View, Taylor's argument at least points to the potential threat of theory collapse. This is a problem if Identity Theory is supposed to be an alternative to both Categoricalism and the Pure Powers View.

## Chapter 6

### 6 Grounding Theories of Powerful Qualities

In the present work, I have been mostly critical of the Powerful Qualities View. In this chapter, I will examine one more species of the view, which I will call *Grounding Theories of powerful qualities*, or more simply, *Grounding Theories*. Like any Powerful Qualities Theory, Grounding Theories affirm that all properties are qualitative and dispositional, and similar to Identity Theory, Grounding Theories do not require properties to have a certain structure. Also, as the name suggests, Grounding Theories involve the relation of metaphysical grounding, particularly when it comes to dispositionality. On Grounding Theories, properties are qualitative with respect to their essence or identity, and they are dispositional insofar as they ground dispositional roles or profiles.

In this chapter, I will discuss two versions of Grounding Theory, one identified by Coates (2020), and another identified by Azzano (2020). Both authors come up with similar versions of the theory, but each has a different motivation. Coates identifies her version as a response to Taylor's (2018) collapse argument, and provides initial grounds for thinking that it can do much of the same theoretical work as Pure Powers Theory. Azzano, on the other hand, identifies his version after coming up with what he sees as adequate notions of qualitativity and dispositionality.

In section 6.1, I will give a brief summary of the standard account of the grounding relation. In section 6.2, I will summarize Coates' and Azzano's positions, and in section 6.3, I mention further advantages of their views. In section 6.4, I will examine the adequacy of their notions of qualitativity and dispositionality. In section 6.5, I will examine Coates' claim that a grounding conception of dispositionality can account for causation, nomic modality, and metaphysical modality. Finally, in section 6.6, I will conclude the chapter by discussing the possibility of a feasible Grounding Theory in light of the preceding discussion.

## 6.1 Metaphysical Grounding

Before discussing Grounding Theories, it will be helpful to first discuss the nature of grounding. First of all, grounding is a relation of necessitation and explanation. The necessity involved is metaphysical necessity, such that if  $A$  fully grounds  $B$ , then if  $A$  exists, then so does  $B$  (i.e.,  $A$  necessitates  $B$ ). Grounding is also thought to be non-causal,<sup>60</sup> metaphysical explanation such that if  $A$  grounds  $B$ , then  $A$  explains  $B$ . The locution “in virtue of” is often interpreted in terms of grounding such that to say that  $A$  grounds  $B$  is equivalent to saying that  $B$  is the case in virtue of  $A$ . Furthermore, while some proponents of grounding think that facts are its proper relata, other advocates think that grounding can occur between various kinds of entities.<sup>61</sup> In this chapter, I will be loose with respect to its relata, since my discussion will not depend on it (as far as I can tell).

Besides involving metaphysical necessity and explanation, on the standard account, grounding is supposed to impose a strict, partial ordering of reality: if  $A$  grounds  $B$ , then  $A$  (the grounding entity) is more fundamental than  $B$  (the grounded entity). On this standard account, then, grounding is taken to be asymmetric, irreflexive, and transitive. Asymmetry entails that if  $A$  grounds  $B$ , then  $B$  cannot ground  $A$ . Irreflexivity entails that  $A$  cannot ground itself. Transitivity entails that if  $A$  grounds  $B$  and  $B$  grounds  $C$ , then  $A$  grounds  $C$ . In this chapter, I will assume the standard account of grounding as strict, partial ordering.

Grounding can be contrasted with logical entailment. While both relations involve necessity, grounding is essentially explanatory, but logical entailment is not (e.g., the

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<sup>60</sup> While thinking about causation can be useful in theorizing about grounding, causation and grounding are typically thought to be distinct relations, where grounding is taken to be non-causal (see Audi 2012; Bernstein 2016; Schaffer 2016). Still, not all agree. Wilson (2018), for example, argues that grounding is a type of causation. For the purposes of this chapter, I will assume that grounding is non-causal.

<sup>61</sup> Since grounding is an explanatory relation, its relata must be apt to explain and to be explained. This seems to require that facts (construed as states of affairs) be the relata of grounding (see Raven 2015, 327). “When filling in the explanation ‘\_\_\_\_\_ because \_\_\_\_\_’, we need sentences [referring to particular facts], not names [referring only to particular objects], to fill the blanks” (Clark and Liggins 2012, 819). A particular sculpture itself does not explain its being magnetic, but rather, the sculpture’s being made of an iron alloy does. Nor is the sculpture itself explained by its being cast in a certain way, but rather, what is explained is the sculpture’s having a particular shape. However, some philosophers think that the relata of grounding is not limited to facts (see Schaffer 2009; 2016).

example of the flagpole and its shadow). Furthermore, unlike grounding, logical entailment does not impose a strict, partial ordering of reality—logical entailment can be reflexive and symmetric. Even further, whereas logical entailment is monotonic, grounding is not. If  $P$  entails  $Q$ , then  $P$  and  $R$  entail  $Q$ . However, if  $A$  grounds  $B$ , then it does not follow that  $A$  and  $C$  ground  $B$ .

Finally, it is an open question whether grounding is a *sui generis*, singular relation, or whether grounding is a plurality of relations, such as the constitutive relation between parts and wholes, the truthmaking relation between truths and truthmakers, and so on. For this chapter, I will assume that grounding is a singular relation.<sup>62</sup>

## 6.2 Two Grounding Theories of Powerful Qualities

### 6.2.1 Coates

As we have seen in the last chapter, Taylor (2018) has argued that Identity Theory collapses into the Pure Powers Ontology, partly because Identity Theorists tend to define qualitativity or categoricity in such a way that even Pure Powers Theorists can accept. Motivated by Taylor's argument, Coates (2021) has identified a version of the Powerful Qualities View that, unlike Identity Theory, is supposed to resist the collapse. While she does not endorse this theory, for the sake of convenience, I will refer to it either as her theory, or as a Coates-style Grounding Theory. And although she does not necessarily endorse it, she defends its coherence and provides some initial grounds for thinking that it can do much of the same theoretical work as Pure Powers Theory. In particular, she claims that just as Pure Powers Theory can account for causation, nomic modality, and metaphysical modality, so too can her Grounding Theory.

At the core of Coates' Grounding Theory are her particular notions of qualitativity and dispositionality. For Coates, the qualitativity of a property has to do with its identity: a property is qualitative insofar as its identity is determined by its intrinsic nature, and not

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<sup>62</sup> It might be worth mentioning that if grounding is not unitary, and in particular, if truthmaking is a kind of grounding relation, then it turns out that the Truthmaking View (Jacobs 2011) very closely resembles the Grounding Theories discussed in this chapter. The views already resemble each other whether or not grounding is unitary, but if truthmaking is a kind of grounding relation, then the Truthmaking View might be considered a species of the Grounding Theory.

by any connections to other properties, whether these connections be strictly relational or intentional. As for dispositionality, Coates defines it in terms of grounding: a property is dispositional insofar as it (partially) grounds its dispositional roles. In this chapter, I will refer to and formally define her notions as follows:

Qualitativity<sub>C</sub> =<sub>df</sub> a property's being such that its identity is determined by its intrinsic nature, i.e., not by its connections (relational or intentional) to distinct properties

Dispositionality<sub>C</sub> =<sub>df</sub> a property's being such that it grounds, at least partially, its occupation of a certain dispositional role

It should be stressed that Coates defines qualitativity and dispositionality in asymmetrical terms: the former in terms of property identity, the latter in terms of certain explanatory patterns in which a property enters. This is similar to the way that Jacobs (2011) defines the same notions for the Truthmaking View (see also Tugby 2012). Recall, that for Jacobs, qualitativity is a matter of being a thick quiddity, where a quiddity is a property that has a primitive *identity*. A property is dispositional, for Jacobs, insofar as it is sufficient to be (part of) the truthmaker for causal counterfactuals—in other words, dispositional properties are able to *explain* (at least partially) the truth of certain counterfactuals.

In relation to Taylor's collapse argument, Coates' Grounding Theory resists the collapse into pure powers: because properties have their identities fixed by their intrinsic natures, and not by their connections to other properties, they cannot be pure powers. By contrast, because Identity Theorists use such weak notions of qualitativity that are compatible with Pure Powers Theory, Identity Theory is vulnerable to one part of Taylor's argument. (However, I also tried to argue in the last chapter that it is not clear whether Identity Theory and Pure Powers Theory use the same notion of power, and hence, it is not clear that Taylor's argument is successful.)

While I think Coates' Grounding Theory is successful in avoiding Taylor's collapse argument, her other reasons for recommending it are more doubtful. As mentioned before, she thinks that her theory can do much of the same theoretical work as pure powers: that is, it looks as if it can account for causation, nomic modality, and

metaphysical modality. There are fairly good reasons to doubt at least some parts of this claim. I will discuss these later on, but for now, let us consider Azzano and his notions of qualitativity and dispositionality.

### 6.2.2 Azzano

Azzano recognizes that in the debate on powers, there are numerous ways of characterizing qualitativity and dispositionality, some of which have already been discussed in the present work. The risk, though, of having so many characterizations is that “whenever two parties agree (or disagree) as to whether properties are dispositional (or categorical), it is possible that their characterizations are not lining up, and they might be talking past each other” (Azzano 2021, 2950). In light of this, Azzano’s goal is to identify and recommend certain notions of qualitativity and dispositionality that can be agreed upon by all parties in the debate. His recommended notions are supposed to clarify qualitativity and dispositionality, and to ensure proper communication between the participants in the debate. After settling on particular notions of qualitativity and dispositionality, Azzano identifies (without recommending) a certain kind of Grounding Theory that involves these notions.

For Azzano, adequate notions of qualitativity and dispositionality must be both comprehensive and divisive with respect to Categoricalism, Pure Powers Theory, and the Powerful Qualities View. For Azzano, a notion is *comprehensive* when it applies to any pair of relevantly similar positions. A notion is *divisive* when it correctly applies to one but not the other of any pair of relevantly dissimilar positions. I prefer to think of divisiveness in the following way: a notion is divisive just in case it is comprehensive, and does not apply to the remaining, relevantly dissimilar view. Consider, for instance, the question of whether human persons are essentially immaterial or material substances. Immaterialist theories (e.g., Platonism, Cartesianism, idealism) maintain that humans are essentially immaterial; materialist theories (e.g., atomism) maintain that humans are essentially material; and mixed theories (e.g., Thomism) maintain that humans are essentially compositions of both the immaterial and material. We can define *ethereality* as the property of being essentially (wholly or partly) an immaterial substance, and *corporeality* as the property of being essentially (wholly or partly) an immaterial

substance. When it comes to the question of the nature of human persons, these notions are both comprehensive and divisive: ethereality applies to immaterialist and mixed theories, but not to materialist theories; and corporeality applies to materialist and mixed theories, but not to immaterialist theories.

When it comes to the question of the qualitativity and dispositionality of properties, both Categoricalism and the Powerful Qualities View, but not Pure Powers Theory, agree that properties are categorical/qualitative. A notion of qualitativity is comprehensive, then, when it applies to Categoricalism and the Powerful Qualities View, and it is divisive when it also does not apply to Pure Powers Theory. Both Pure Powers Theory and the Powerful Qualities View, but not Categoricalism, agree that properties are intrinsically powerful. A notion of dispositionality is comprehensive, then, when it applies to Pure Powers Theory and the Powerful Qualities View, and it is divisive when it also does not apply to Categoricalism.

Azzano identifies *Qualitative Identity* as an adequate notion of qualitativity. On this notion, a property is qualitative when its identity is fixed not by dispositional or nomic profile, but primitively or otherwise. He also identifies *Exclusive Contribution* as an adequate notion of dispositionality. On this notion, a property is dispositional when it fully grounds (or otherwise non-causally explains) a certain dispositional profile in its bearer.<sup>63</sup> Qualitative Identity is supposed to be both comprehensive and divisive, since it applies to the properties of both Categoricalism and Mixed Views, but not to those of Pure Powers Ontology. Exclusive Contribution is supposed to be both comprehensive and divisive, since it applies to the properties of Pure Powers Ontology and Mixed Views, but not to those of Categoricalism. I will critically discuss whether these notions are indeed both comprehensive and divisive, but before that, there is some need for clarification.

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<sup>63</sup> In Azzano's own words, "A property is dispositional if and only if it is solely in virtue of possessing that property that its bearer is assigned a certain dispositional profile" (Azzano 2021, 2967). As I read him, this is not to say that a single dispositional property must fully ground the *total* dispositional profile of its bearer, as if a single property of an object is responsible for the totality of its various dispositions (except in the case of single-proprieted objects). I take the total dispositional profile of a bearer to be the sum (or some function) of the dispositional profiles of its properties. I take it that there is a certain dispositional profile associated with each property, and it is this that the property contributes to its bearer by way of *full* grounding—the property itself grounds the dispositional profile, not in conjunction with any other property.



It is typical to think of the dispositional profile *of a property* as consisting in the dispositional roles that it plays. However, when Azzano speaks of dispositional profiles, he also speaks of the dispositional profiles *of objects*. Although he does not make this totally explicit, Azzano assumes different senses of “dispositional profile,” depending on whether it is applied to properties or objects. In the case of properties, the term simply refers to the dispositional roles that a property plays. In the case of objects, the term refers to the dispositions that an object possesses. This latter meaning of “dispositional profile” is evident in a single passage, where Azzano discusses his definition of dispositionality:

[Pure Powers Theorists] can surely agree that instances of pure powers are all it takes to confer [on] an object a certain dispositional profile. . . . Contrariwise, a Categoricalist takes properties to be just a part of the story of how an object is empowered; something else, say, a law of nature, or a primitive subjunctive fact, has to come to their help *to endow objects with dispositions*. (Azzano 2021, 2968; emphasis added)

As the emphasized portion suggests, the dispositional profile of an object consists in the dispositions that a property grounds. Note also that according to the quoted passage, the contrast between Pure Powers Theorists and Categoricalists is that for the former, properties fully ground the dispositional profiles of their bearers, but for the latter, properties ground the dispositional profiles of their bearers only in conjunction with, say, a law of nature.

What this means, then, is that on Qualitative Identity, a qualitative property is one that does not get its identity fixed by any dispositional role. For Exclusive Contribution, this means that a dispositional property is one that fully grounds a disposition(s) in the object that possesses it. With all of this in mind, I will hereafter use the following terms and definitions when discussing Azzano’s notions of qualitativity and dispositionality:

Qualitativity<sub>A</sub> (i.e., Qualitativity Identity) =<sub>df</sub> a property’s being such that its identity is not determined by any dispositional profile (i.e., dispositional role(s)), but primitively or otherwise

Dispositionality<sub>A</sub> (i.e., Exclusive Contribution) =<sub>df</sub> a property’s being such that it is solely in virtue of possessing it that its bearer is assigned a certain dispositional profile (i.e., disposition(s))

It is important to recognize that  $\text{Dispositionality}_A$  (i.e., Exclusive Contribution) “merely characterizes [the property] as taking part in certain explanatory patterns, and doesn’t require it to have any particular composition, internal make-up, or nature of any kind” (Azzano 2021, 2972). This means that even though properties and objects have their respective dispositional profiles, the dispositions of an object need not be grounded in properties with dispositional roles. Just like Coates’ definitions, Azzano’s definitions of qualitativity and dispositionality are concerned with different aspects of a property: its identity, and its figuring into certain explanatory patterns, respectively. And this asymmetry in notions makes it possible for there to be a Grounding Theory in terms of  $\text{Qualitativity}_A$  and  $\text{Dispositionality}_A$ . Indeed, Azzano recognizes the possibility of a Grounding Theory characterized in exactly these terms. I will refer to a such theory as Azzano-style Grounding Theory.

### 6.3 Advantages of Grounding Theories

As mentioned earlier, Coates thinks that a Grounding Theory can account for causal, nomic, and metaphysical modality, and Azzano thinks that his definitions of qualitativity and dispositionality adequately map out the debate on powers. I will discuss my doubts about about these claims later, but here it is worth mentioning that a Grounding Theory (Coates-style or Azzano-style) does have further advantages not discussed by either Coates or Azzano. These seem to be good reasons for preferring a Grounding Theory over other forms of the Powerful Qualities View.

*Multiple realizability.* Not all Powerful Qualities Theorists tolerate multiple realizability (see Heil 2003, 87–89; 2005, 346–350). Nonetheless, a Grounding Theory is consistent with multiple realizability, and is an available option for Powerful Qualities Theorists who think that the same disposition can be realized by different qualities. This is possible since on a Grounding Theories, properties do not have their identities fixed by dispositional roles or profiles. That said, even if dispositions are multiply realizable on a Grounding Theory, it does not follow that the relations between properties and the dispositions they realize is completely contingent. From multiple realizability, it does not follow that properties and dispositions can be recombined arbitrarily across possible worlds. A proponent of a Grounding Theory can maintain that while some dispositions

are multiply realizable, they can be realized only by a certain set of properties but not others across possible worlds. One might think that the disposition of being magnetic, for example, can be realized by objects if they are composed of iron, nickel, or cobalt, but not if they are composed of wood, plastic, or rubber, and that this holds across possible worlds. As to why this might be the case, a proponent of Grounding Theory can appeal to an essential explanation (e.g., “It is essential to  $f$  and  $g$  that they each ground  $d$ ”) or even a brute explanation (e.g., “It just is the case that  $f$  and  $g$  each ground  $d$ ”).<sup>64</sup>

*Robust dispositionality and truthmaking.* The Truthmaking View (Jacobs 2011) captures the Dispositionalist intuition that dispositions are the truthmakers for causal counterfactuals. Indeed, on the view, to be a dispositional property is simply to be a property that has a nature sufficient to be part of a truthmaker for causal counterfactuals. However, Dispositional Realists typically think that dispositions make such counterfactuals true *because* of their necessary connections to other properties. These necessary connections to other properties are absent in the Truthmaking View, or at least they are not made explicit, and so it is not clear whether the powerful qualities of the Truthmaking View can really be truthmakers for the relevant counterfactuals. To be sure, one can maintain that it is just a brute fact that certain properties make certain causal counterfactuals true, but this runs counter to the typical Dispositionalist intuition. A

<sup>64</sup> Azzano raises the issue of whether dispositional properties, as those properties which ground dispositional profiles, must also have dispositional (non-qualitative) essences or identities, fixed in relation to dispositional profiles (Azzano 2021, 2970–71). He is inclined to think that which dispositional profiles are grounded by which properties is a matter of brute fact, that need not be explained by an appeal to essences or property identity. While it is beyond the scope of this chapter to argue either way, I wonder to what extent an essentialist explanation of which properties ground which dispositional profiles is independent of whether properties have dispositional identities. At least in some cases, it seems essential for a property to ground certain dispositional roles or profiles (it grounds these *because* of the kind of property it is), even if the property itself does not have an identity fixed by such roles or profiles. Consider, geometrical properties, for example. While being spherical does not have its identity fixed by any dispositional roles or profiles, it nonetheless seems essential for it to influence an object’s behaviour in certain ways. A spherical object, *because it is spherical* (and because of gravity, friction, and so on), will roll if placed on a slope, and this seems to hold in similar circumstances across possible worlds. Compare this with a cubical object, which under similar conditions, will not roll because it is cubical. However, in other cases, it appears to be a brute fact that certain properties (defined non-dispositionally) have certain dispositional roles. Consider stereoisomers (chemical compounds with the same chemical composition but different structures), and in particular, carvone. Carvone has two arrangements, each of which humans experience differently. Under one arrangement, carvone produces a spearmint scent, but under another, it produces the scent of caraway. Which scent a certain arrangement produces does not seem to be essential to it—there does not seem to be an essential connection between molecular arrangement and scent. In some possible world, the two arrangements of carvone might have their scents swapped, or they might even be undetectable by smell.

Grounding Theory, however, while similar to the Truthmaking View, nonetheless uses a more robust notion of dispositionality. Both views maintain that property identity is intrinsic (non-dispositional), but Grounding Theory uses a more robust notion of dispositionality (whether in Coates' terms or Azzano's), which both supports counterfactuals and resembles what Dispositionalists typically have in mind with respect to dispositionality. Grounding Theory, like other forms of Dispositional Realism, requires properties to occupy certain dispositional roles (grounded by their qualitative natures), whereas the Truthmaking View does not.

*Being distinct from neutral Monism.* Identity Theory (on the nuanced reading; see section 2.4) is unstable insofar as it threatens to collapse into either neutral Monism or Pure Powers Ontology. We have already considered the collapse into Pure Powers Ontology. As for the collapse into neutral Monism, it stems from the objection that the distinction between qualitativity and dispositionality is only conceptual, or mind-dependent (see Molnar 2003). It does not help that Martin and Heil compare properties to ambiguous pictures, and claim that the qualitativity and dispositionality of a property are picked out only by partial consideration of the property (much like ambiguous drawings, both cannot be seen at the same time). Furthermore, Heil has stated that strictly speaking, properties *contribute* qualities and powers. All this suggests a neutral Monism—a property can be seen as qualitative or dispositional, and it contributes qualities and powers, but it is unclear what the property is *per se*. The Grounding Theory avoids this collapse. The theory makes clear that properties have their identities fixed non-dispositionally, so this narrows down properties to qualities (or in the case of Qualitativity<sub>A</sub>, qualities or non-qualitative quiddities). There is also no hint that either qualitativity or dispositionality, on the Grounding Theory, is a matter of viewing the property in certain ways.

*Property simplicity and no overdetermination in property identity.* Neither Dispositionality<sub>C</sub> nor Dispositionality<sub>A</sub> require that a property have a certain structure. This allows for the possibility of properties which are both qualitative and dispositional, without thereby having parts. And since on a Grounding Theory, property identity is determined non-dispositionally (as per Qualitativity<sub>C</sub> and Qualitativity<sub>A</sub>), there is no worry about the overdetermination of a property's identity. These points give Grounding

Theories an advantage over non-identity, compound theories that maintain that properties have qualitative and dispositional parts, which overdetermine their identities (see Taylor 2018; William 2019).

Now, despite these advantages, there are remaining problems for Grounding Theories, which we will now consider.

## 6.4 The Adequacy of Qualitativity and Dispositionality

Here I want to discuss the adequacy of Coates' and Azzano's notions of qualitativity and dispositionality. I will distinguish between weak and strong adequacy. I will refer to Azzano's notion of adequacy as *strong adequacy*. Strong adequacy, then, has to do with whether a notion is comprehensive and divisive with respect to Categoricalism, Pure Powers Theory, and the Powerful Qualities View. Again, a notion is comprehensive when it applies to a pair of relevantly similar views, and divisive when it is comprehensive and does not apply to the remaining dissimilar view. I take it that on Azzano's view, adequate notions of qualitativity and dispositionality should apply to *all* kinds of Powerful Qualities Views, and not just Identity Theories (as well as all kinds of Categoricalism and Pure Powers Theory). If this makes Azzano's view seem too strong, remember that his aim is to facilitate discussion within the debate on powers, and so strongly adequate notions, acceptable to *all* parties of the debate, will guarantee that no party will talk past another. However, as will be discussed, this seems to be too lofty a goal.

I define weak adequacy as relativized to particular Powerful Qualities Theories. A notion of qualitativity is weakly adequate for a particular Powerful Qualities Theory when it applies to it and (all sorts of) Categoricalism, but not to Pure Powers Theory. A notion of dispositionality is weakly adequate for a particular Powerful Qualities Theory when it applies to it and (all sorts of) Pure Powers Theory, but not to Categoricalism. Strong adequacy implies weak adequacy, but the converse does not hold. The main difference between strong and weak adequacy is that weak adequacy does not require that particular notions of qualitativity and dispositionality apply to all kinds of Powerful Qualities Theory. A Powerful Qualities Theory can use notions of qualitativity and dispositionality that are weakly adequate, but not strongly adequate—they might not apply to other types

of Powerful Qualities Theory, which involve their own weakly adequate notions. While I think that it is possible to have a Grounding Theory that uses weakly adequate notions of qualitativity and dispositionality, the Grounding Theories identified by Coates and Azzano fail to have weakly adequate notions of both.

With these definitions in mind, let us now consider the adequacy of Coates' and Azzano's notions of qualitativity and dispositionality.

### 6.4.1 Qualitativity

Let us begin, then, with the definitions of qualitativity. A definition of qualitativity is strongly adequate just in case it is both comprehensive and divisive. It is comprehensive just in case it applies to the properties of Categoricalism and the Powerful Qualities View. It is divisive just in case it is comprehensive and does not apply to pure powers. Arguably, Qualitativity<sub>C</sub> fails to be comprehensive, and hence, it fails to be divisive. It fails to be comprehensive because it does not apply to all the properties that Categoricalists and Powerful Qualities Theorists consider to be qualities. To be sure, Qualitativity<sub>C</sub> successfully excludes pure powers, and Coates was careful to exclude them whether their identities are construed in terms of relations or intentional connections to distinct properties. However, Qualitativity<sub>C</sub> nonetheless fails to apply to geometrical properties, since these too are defined in relation to distinct properties. To be spherical, for example, is to be a three-dimensional shape such that every point of the surface is equidistant from the centre. Another example: to be pyramidal is to be a three-dimensional shape with a polygonal base and triangular faces that meet at a common point. These and other geometrical properties are thought to be qualities by both Categoricalists and Powerful Qualities Theorists, but they fail to count as qualities under Qualitativity<sub>C</sub>. Thus, Qualitativity<sub>C</sub> fails to be comprehensive, and hence, it also fails to be divisive. It, hence, fails to be strongly adequate. However, it similarly fails to be weakly adequate too: geometrical properties are exemplary qualities on any Identity Theory, so a weakly adequate notion of qualitativity should apply to them.

Qualitativity<sub>A</sub>, on the other hand, is more limited in scope with respect to which properties it excludes. It does not exclude all properties whose identities are determined

by relations to other properties (e.g., geometrical properties), but only those whose identities are determined in relation to some dispositional profile. When we consider qualities, such as geometrical properties, we see that they are not defined in relation to some dispositional profile. They are, thus, not thereby excluded by Qualitativity<sub>A</sub>. To be sure, it might be the case that some qualities can be picked out with dispositional descriptions unique to them (e.g., being spherical is picked out by the description of “being the property that influences objects to roll a certain way”). But for such qualities, it can be maintained that although they can be picked out by unique dispositional descriptions, their essences or identities are not fixed or constituted by any dispositional connections to other properties.

However, while Qualitativity<sub>A</sub> fares better than Qualitativity<sub>C</sub> in this respect, it is nonetheless doubtful that it is comprehensive. The problem is that different versions of the Powerful Qualities View individuate properties in different ways. Jacobs (2011) and Coates (2021) prefer quiddistic/intrinsic individuation. On the Identity Theory of Martin (2008) and Heil (2003), properties are (apparently) individuated by intentionality. It would also be possible for a Powerful Qualities Theorist to affirm relational individuation. Finally, on Williams’ Mixed Monism (2019), properties have their identities overdetermined by their qualitative character and by their dispositional profile. The same can probably be said of the Compound View identified by Taylor (2018). While Qualitativity<sub>A</sub> applies to powerful qualities according to Jacobs and Coates, it does not apply to the powerful qualities of Martin, Heil, Williams. Thus, Qualitativity<sub>A</sub> fails to be comprehensive, and hence, it fails to be strongly adequate.

Now, suppose that we agree with Taylor (2018) that the Powerful Qualities Ontology, at least according to Martin and Heil, is no different from the Pure Powers Ontology. If this is the case, then whether Qualitativity<sub>A</sub> is comprehensive will not depend on whether it applies to the properties of Identity Theory. Still, Williams’ Mixed Monism remains a problem. Mixed Monism is clearly not a kind of Pure Powers Theory, but neither are the properties of the theory qualitative in the sense of Qualitativity<sub>A</sub>. While Williams thinks that a property’s qualitative character is sufficient to fix its identity, he thinks that the very same property’s dispositional profile is also sufficient to fix its identity. On Mixed

Monism, “every property has its identity fixed twice over” (Williams 2019, 118)—once by its qualitative character, and again by its dispositional profile. And since properties on this view have their identities fixed by their dispositional profile, they cannot be qualitative in terms of  $Qualitativity_A$ .<sup>65</sup>

However, while  $Qualitativity_A$  might not be strongly adequate, it is at least weakly adequate. It clearly does not apply to pure powers, but it applies to the properties of Categoricalism. And while it might not be acceptable to all Powerful Qualities Views, because it does not exclude any subset of qualities, it looks like it can be accommodated by some versions of Identity Theory.

### 6.4.2 Dispositionality

A strongly adequate definition of dispositionality must be comprehensive and divisive. It is comprehensive just in case it applies to both pure powers and powerful qualities. It is divisive, just in case it is comprehensive and does not apply to the properties of Categoricalism. As for  $Dispositionality_C$ , under the assumption that grounding is a unitary relation, it fails to be comprehensive, since not all Dispositional Monists (Pure Powers Theorists and Powerful Qualities Theorists) accept grounding. Heil (2021), for example, eschews grounding in favour of truthmaking. To be sure, that grounding is a unitary relation is not an uncontroversial assumption. But it is not obvious either that grounding consists in a plurality of relations (including truthmaking). Furthermore, even if it did, and even if all forms of Dispositional Monism can accommodate grounding in some way, it still does not follow that  $Dispositionality_C$  would be comprehensive (see Appendix). Even without assuming that grounding is unitary, at best it is not clear that  $Dispositionality_C$  is comprehensive.

However, even if we were to assume that  $Dispositionality_C$  is comprehensive, it would nonetheless fail to be divisive, since it applies to the properties of Categoricalism. This is because  $Dispositionality_C$  requires only that properties be partial grounds (rather than full grounds) for their occupation of certain dispositional roles.<sup>66</sup> A Categoricalist, then, who

<sup>65</sup> It is unclear how  $Qualitativity_A$  (or even  $Qualitativity_C$ ) can be modified to accommodate Williams’ Mixed Monism, since qualitative identity is defined negatively, as not being determined in relation to a dispositional profile.



favours grounding can maintain that a categorical property can ground its dispositional role in conjunction with the laws of nature (construed realistically). One can consider this as a type of Armstrongean Categoricalism, or at least a development of it, since Armstrong himself did not invoke grounding. Such a Categoricalist would say that a property (e.g., the mass of an object, as the amount of matter packed in a particular volume) does not by itself fully ground its dispositional role (e.g., as the property which determines gravitational attraction), since, apart from the help of necessitation laws, properties are by themselves causally inert. Nor does the relevant law by itself (e.g., Newton's law of universal gravitational attraction, or the Armstrongean equivalent) fully ground the dispositional role independently of the property, since the property is constitutive of the law. *Dispositionality<sub>C</sub>*, then, applies to the properties of a certain type of Categoricalism, and hence, it is not divisive.

Smith (2016) also identifies a kind of Categoricalism, the properties of which also count as dispositional according to *Dispositionality<sub>C</sub>*. On moderately (or qualitative) Austere Quidditism, a qualitative property, because of its qualitative nature, will determine at least some of its nomological (dispositional) roles, and this determination relation is one of metaphysical necessity. She writes that a proponent of the view “will claim that the qualitative natures that are fundamental properties ground certain powers of the individuals that instantiate them” (Smith 2016, 253). However, Smith is not explicit about what exactly she means by “ground” (in her article, the quoted passage is the only place where she uses the term). That being said, she seems to have something like grounding in mind, and at least it would be natural for a proponent of Moderately Austere Quidditism to appeal to grounding. After all, on Moderately Austere Quidditism, a qualitative nature determines its nomological profile (at least in part) by metaphysical necessity, because it is the quality that it is, and differences in nomological profiles can be explained (at least in part) by differences in qualitative natures.<sup>66</sup> *Dispositionality<sub>C</sub>*, then also applies to this form of Categoricalism.

<sup>66</sup> Qualitative natures might not be enough to completely account for the nomological profiles of objects and their properties. For a complete account, Moderately Austere Quidditism might require an appeal to laws. Where laws are needed to determine nomological profiles, and assuming the contingency of laws, the type of necessity involved will be less than metaphysical necessity. In these cases, laws determine nomological profiles by natural necessity. Since natural necessity is weaker than metaphysical necessity, the kind of determination involved is weaker than grounding.

So, then, Dispositionality<sub>C</sub> is not comprehensive at worst, and not clearly comprehensive at best. And even if it were comprehensive, it would fail to be divisive, since it applies to certain forms of Categoricalism. Thus, Dispositionality<sub>C</sub> fails to be strongly adequate. However, it also fails to be weakly adequate because it cannot distinguish the Powerful Qualities View from certain kinds of Categoricalism. This is the same problem for Jacobs' Truthmaking View: because it requires only that a dispositional property be sufficient to be *part* of the truthmaker for causal counterfactuals, it fails to distinguish itself from Categoricalism. Similarly, with Dispositionality<sub>C</sub>, since it requires only that a dispositional property be *part* of the grounds for their dispositional roles, it also fails to distinguish Grounding Theory from certain kinds of Categoricalism. Perhaps, then, for a Grounding Theory to be distinct from Categoricalism, it needs to maintain that a property be the full grounds for its dispositionality. This is what Azzano's notion of dispositionality does, but as we shall see, that in itself does not guarantee its adequacy.

Let us now, then, consider Dispositionality<sub>A</sub>.<sup>67</sup> Unlike Dispositionality<sub>C</sub>, Dispositionality<sub>A</sub> requires a property to fully ground its respective dispositional profile. This gives Dispositionality<sub>A</sub> some advantage in adequacy, but ultimately, it still suffers from much of the same problems as Dispositionality<sub>C</sub>. With respect to comprehensiveness, the situation is the same for Dispositionality<sub>A</sub> as it is with Dispositionality<sub>C</sub>. Because grounding is not universally accepted or acceptable on Dispositional Monistic theories, Dispositionality<sub>A</sub> fails to be comprehensive (or at best, it is not clear that it is comprehensive).

Furthermore, even if Dispositionality<sub>A</sub> were comprehensive, it would nonetheless fail to be divisive. To be sure, Dispositionality<sub>A</sub> has the advantage over Dispositionality<sub>C</sub> insofar as it successfully excludes Armstrongean-style Categoricalism. Because of the requirement for full grounding, the properties of Armstrongean-style Categoricalism do not count as dispositional. At most, Armstrongean properties can only be the partial grounds for

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<sup>67</sup> Here I will discuss Dispositionality<sub>A</sub> in terms of grounding, although the notion itself is defined more broadly. While Azzano suggests grounding, he leaves Dispositionality<sub>A</sub> open to interpretation in terms of non-causal explanation. However, he thinks that whatever non-causal explanation involved in Dispositionality<sub>A</sub> should involve metaphysical necessity, so as to guarantee "that dispositional properties are necessarily paired with their dispositional profiles" (Azzano 2021, 2967). Given that metaphysical necessity is involved, the regress problem for Dispositionality<sub>A</sub>, defined in terms of grounding, should also apply to it regardless of whatever kind of non-causal explanation is invoked (at least as far as I can tell).

dispositional roles or profiles. However, while  $\text{Dispositionality}_A$  has this advantage, it nevertheless fails to exclude Moderately Austere Quidditism. Again, on Moderately Austere Quidditism, a qualitative property is related to its dispositional profile by metaphysical necessity.<sup>68</sup> In terms of grounding, the view entails that properties fully ground certain dispositional profiles.  $\text{Dispositionality}_A$ , then, applies to the properties of Moderately Austere Quidditism, and hence, even if it were comprehensive, it would not be divisive.<sup>69</sup>

Like  $\text{Dispositionality}_C$ , it seems that  $\text{Dispositionality}_A$  fails to be comprehensive, or at least it is not clear that it is so. Furthermore, even if it were comprehensive, it would fail to be divisive.  $\text{Dispositionality}_A$ , then, fails to be strongly adequate. It fails to be weakly adequate as well, since it is too weak to distinguish Grounding Theory from Moderately Austere Quidditism.<sup>70</sup>

### 6.4.3 The Possibility of Adequate Notions

The discussion in this section shows the difficulty in coming up with adequate notions of qualitativity and dispositionality. It seems that finding strongly adequate notions, which are comprehensive and divisive, is too lofty a task. Although neither Coates nor Azzano have provided strongly adequate notions, much of the problem comes from the side of Powerful Qualities Theorists. Because Powerful Qualities Theorists do not all agree on property individuation and grounding, the task of finding strongly adequate notions of qualitativity and dispositionality is insurmountable. In the context of the wider debate,

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<sup>68</sup> When Smith (2016) discusses moderately austere quiddities, she appears to think of their dispositional profiles as consisting in their dispositional roles. However, for the sake of argument, my characterization here of Moderately Austere Quidditism assumes Azzano's sense of dispositional profile, which does not involve the roles of a property, but the dispositions that a property grounds. It does not seem to me to be too much of a departure from Smith's original characterization. If one wishes, one can consider it a version of Moderately Austere Quidditism distinct from Smith's, but similar enough for the purposes of my argument.

<sup>69</sup> It might be argued that Moderately Austere Quidditism is better classified as a kind of Powerful Qualities View. If so, then it wouldn't be a problem for either  $\text{Dispositionality}_C$  or  $\text{Dispositionality}_A$ . (It might be interesting to note that Smith herself, in her 2016 article, considers the idea of Identity Theory as a kind of Moderately Austere Quidditism.) However, Armstrongean-type would remain a problem for  $\text{Dispositionality}_C$ , and it would remain unclear whether  $\text{Dispositionality}_C$  and  $\text{Dispositionality}_A$  are comprehensive.

<sup>70</sup> Besides inadequacy,  $\text{Dispositionality}_A$  also seems to suffer from a regress problem (see Appendix).

this appears to be bad news: if the goal is to facilitate discussion via consistent, univocal notions of qualitativity and dispositionality, then the presence of Powerful Qualities Theories that disagree with one another, makes the goal impossible

The best that a Grounding Theorist (or any kind of Powerful Qualities Theorist) can hope for is weakly adequate notions of qualitativity and dispositionality for a particular instance of Powerful Qualities Theory. Such notions should distinguish a particular Powerful Qualities Theory from Categoricalism and Pure Powers Theory, while tolerating differences among other instances of Powerful Qualities Theory. Fortunately, Qualitativity<sub>A</sub> turns out to be a weakly adequate notion that is available to the Grounding Theorist. Unfortunately, the situation is more difficult with respect to dispositionality. Dispositionality<sub>C</sub> and Dispositionality<sub>A</sub> both fail to be weakly adequate and it is not clear what a better alternative would look like given the problems discussed above (see also the Appendix).

Despite its advantages, the problems discussed in this section cast some doubt on the feasibility of Grounding Theories. I will return to the issue of the feasibility of Grounding Theories in section 6.6, but for now, let us first consider some of the initial grounds for recommending Grounding Theories.

## 6.5 Causation, Nomic Modality, and Metaphysical Modality

Setting aside the issue of adequacy, Grounding Theory is nevertheless a coherent theory. Because of the asymmetry in the definitions of qualitativity and dispositionality (where the former pertains to property identity, and the latter to the grounding of dispositional roles), they are not mutually exclusive terms. Nonetheless, some philosophers assume that in order for properties to be dispositional, they must also have extrinsic essences, determined by their connections to other properties (see Azzano 2021, 2970–71). In response to this assumption, Coates provides some initial grounds to think that properties, on Grounding Theory, can do much of the same theoretical work as pure powers, despite their intrinsic natures. In particular, she thinks that the grounding conception of

dispositionality<sup>71</sup> is suitable to account for causation, nomic modality, and metaphysical modality. She argues for this by first considering how Pure Powers Theorists account for these phenomena. She summarizes their arguments as follows:

While the details of these accounts are complex and differ in significant respects, they generally involve two basic steps. In the first, the fact that powers have dispositional essences or identities is used to account for their occupation of their dispositional roles. In the second, the fact that powers occupy these dispositional roles is employed to give an account of causation, nomic modality or metaphysical modality. Pure powers, then, are supposed to be able to account for the target phenomena, *just because their essences account for their occupation of their dispositional roles*. (Coates 2021, 8359; emphasis added)

Pure powers, according to Coates, insofar as their essences or identities explain their occupation of certain dispositional roles, can also explain causation, nomic modality, and metaphysical modality. Coates claims that in the same way, the grounding conception of dispositionality can also account for these same phenomena. She continues:

On the disposition-grounding conception of powerful properties, though, it also looks plausible that the essences of properties account for their occupation of their dispositional roles. As noted above, on this conception it seems plausible that a property's essence, in conjunction with the essences of its manifestation partners, will fully ground—and, so, account for—that property's occupation of its dispositional role. So, the conception of a property's powerfulness as its having a dispositional-role grounding nature looks well-suited to capture the key characteristic that, according to Pure Powers Theorists, allows powers to account for the target phenomena. (Coates 2021, 8359)

On Grounding Theory, the (intrinsic) natures of properties ground (and hence, explain) their occupation of certain dispositional roles, and insofar as this is true, properties can also explain or account for causation, nomic modality, and metaphysical modality.

In this section, I want to have a closer inspection of these initial grounds. As it turns out, it appears that Grounding Theory, with its grounding conception of dispositionality, is well suited to fully explain nomic modality, and to partly explain causation. While this is good for the view, Grounding Theory is not suited to explain metaphysical modality.

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<sup>71</sup> By a “grounding conception of dispositionality,” Coates has Dispositionality<sub>C</sub> in mind. However, in this chapter, I will use the term to also cover Dispositionality<sub>A</sub>. I will assume that the following discussion, just as much as it applies to Dispositionality<sub>C</sub>, will also apply to Dispositionality<sub>A</sub>, *mutatis mutandis*.

Thus, while Grounding Theory is suited to do some of the theoretical work of pure powers, it is not suited to do as much work as Coates had initially suggested.

### 6.5.1 Nomic Modality

As for nomic modality, it seems plausible that a grounding conception of dispositionality can explain the laws of nature. Powers Theorists typically think of laws in terms of dispositions. Swoyer (1982), for example, identifies the laws of nature with relations between dispositional properties. Ellis (2001) and Molnar (2003) describe powers as the truthmakers for laws. Bird (2007b) thinks that laws “reflect” or supervene on the dispositional essences of properties.<sup>72</sup> The basic idea is that the relations between dispositional properties and their manifestations can somehow support laws of nature.

A grounding conception of dispositionality seems able to capture this idea. Dispositional properties, on the grounding conception, ground their occupation of their dispositional roles. Another way of describing this is to say that the natures of properties ground their causal or nomic relations to one another. If the laws are identical to or supervene upon these relations, then one can say that dispositional properties directly ground the laws of nature. The result is the same if dispositional properties are the truthmakers for laws, and truthmaking is a kind of grounding. In this way, then, it seems that a grounding conception of powers can account for the laws of nature.

### 6.5.2 Causation

As for causation, a grounding conception of dispositionality is limited in its role in explaining causation. In discussing Pure Powers Theorists who try to account for causation, Coates mentions Bird (2010), Mumford and Anjum (2011), and Marmodoro (2017). Bird and Marmodoro analyze causation in terms of the manifestation of dispositions:

A causes B when there is a sequence of dispositions  $D_1, \dots, D_n$  such that for each  $D_i$  and  $D_{i+1}$ , the manifestation of the former is the stimulus to the latter, and A is the stimulus of  $D_1$  and B is the manifestation of  $D_n$ . (Bird 2010)

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<sup>72</sup> By contrast, Mumford (2004) thinks that there are no laws, and that powers are sufficient to explain regularities in nature.

On the view I am proposing, the causal partner-powers are mutually activated from potentiality to activity. All there is to their causal ‘interaction’ is their *mutual and simultaneous manifestation* (e.g. heating and being heated). (Marmodoro 2017, 70)

Instead of describing causation in terms of the manifestation of powers, Mumford and Anjum do so in terms of the passing around of powers:

On reflection, the idea of causation as a passing around of powers, especially for a pandispositionalist, starts to look extremely attractive. Some examples will illustrate this.

You come in from the cold and sit by the fire. You sit by the fire because it is hot, which for the pandispositionalist means that it has the power to warm your body. Causation occurs when the fire warms your body, changing it from cold to hot. Armstrong retorts that such causation, for pandispositionalism, consists in the mere passing around of powers. In the present case, that would mean that the heat of the fire, which consisted in it having the power to warm some other object, has been passed on to you. But that sounds quite right. (Mumford and Anjum 2011, 5–6)

Whether it is the manifestation or passing around of powers, for the Powers Theorist, causation is essentially something that happens between properties.<sup>73</sup>

Now, regardless of whether causation is the manifestation or passing of properties,<sup>74</sup> the grounding conception of dispositionality is limited in its role in explaining causation. In the case of the laws of nature, there is a straightforward explanation from the natures of properties, which ground their dispositional roles, to laws of nature—properties, insofar as they ground their roles, thereby ground laws. Causation, at least for Pure Powers Theorists, is the manifestation of properties, but a manifestation requires more than that properties occupy certain dispositional roles. Properties do not bring about their manifestations just because they occupy certain roles in virtue of their nature.<sup>75</sup>

<sup>73</sup> For the Powers Theorist, causation between events is reducible to causation between properties.

<sup>74</sup> Hereafter, for the sake of convenience, I will refer to powers causation as the manifestation of dispositions. However, what I will say should also apply to powers causation as the passing of powers.

<sup>75</sup> This seems to be the case at least for manifestations that require two or more properties. It might be thought that properties that spontaneously manifest, without need of partner properties, bring about their manifestations simply in virtue of occupying their particular dispositional roles (e.g., whichever property is responsible for the radioactive decay, say, of uranium). However, as will be discussed later, the manifestation of dispositions, even spontaneous ones, cannot be a kind of grounding because of the possibility of interference.

Furthermore, Powers Theorists regularly maintain that properties can occupy certain dispositional roles without ever bringing about their manifestations. Thus, dispositional properties, on the grounding conception, insofar as they ground their own roles, are not sufficient to explain causation.

Instead, dispositional properties, on the grounding conception, are only part of the explanation for causation. If causation is the manifestation of dispositional properties, and hence, requires properties which occupy dispositional roles, then the grounding conception of dispositionality can at least explain why (certain) properties occupy (certain) dispositional roles. But in order to give a complete account of a particular instance of causation, more must be included in the explanation (e.g., the proximity of the partnering dispositional properties). Dispositional properties *per se*, on the grounding conception, at most provide only the partial explanation for causation. To be sure, though, this does not put Grounding Theory at a disadvantage with respect to other theories of Dispositional Realism, since the same can be said for them.

Now, before moving on to metaphysical modality, let us address a potential question for those sympathetic to Grounding Theory. Some might wonder to what extent grounding is useful in explaining causation. In the case of nomic modality, dispositional properties, on the grounding conception, do not merely explain laws, but they ground them. It might be wondered if something similar can be maintained in the case of causation. Properties can (partially) *explain* causation, but more specifically, can they also (partially) *ground* causation? Given the transitivity of grounding, properties can (partially) ground causation only if property manifestation turns out to be a kind of grounding. This might be an attractive position for some, especially since dispositional properties and causation have historically been thought to involve necessity (see Popper 1972, 91; Harré and Madden 1975; Shalkowski 1992, 55). Could it be that the necessity involved in causation is the necessity of grounding? However, if property manifestation is not a grounding relation, then there cannot be a grounding chain from the property to its manifestation, and so the property cannot even be partial grounds for its manifestation.



There are a couple of problems though. Firstly, grounding is a non-causal relation, but property manifestation is supposed to be causal. The Grounding Theorist, being a Dispositional Realist (and Dispositional Realists are typically anti-Humean), might hesitate to identify or reduce causation as property manifestation to something non-causal, such as grounding. Such an idea might be too Humean for a Grounding Theorist to accept.<sup>76</sup> Of course, I have assumed the standard account of grounding as non-causal, but perhaps a causal theory of grounding will fare better. Wilson (2018), for instance, has argued that grounding is a type of causation, namely, metaphysical causation.<sup>77</sup> To say, then, that gold's having a certain atomic composition grounds its being malleable, electrically conducive, and so on, is to say that its having a certain atomic composition is the metaphysical cause of its having certain dispositions. The counterpart to grounding is nomological causation, which is mediated by laws of nature (or for the dispositionalist who prefers to reduce laws to relations between powers, then it is causation mediated by the manifestation of powers). An example of this is any instance of gravitational attraction between two middle-sized objects (approximately) according to Newton's law of universal gravitation. If an instance of causation is mediated by laws of nature (or powers), then it is an instance of nomological causation. If an instance of causation is not

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<sup>76</sup> Henry Taylor, in his comments on a previous draft of this work, asks why the reduction of the causal to the non-causal would be too Humean for the dispositionalist, since dispositionalists reduce causation to something else, such as the manifestation of powers. (Thanks to Taylor for this comment.) If I understand him correctly, Taylor assumes that the reduction of causation to manifesting powers is an instance of reducing the causal to the non-causal. However, I disagree with this assumption, and I agree, rather, with Mumford and Anjum (2011, 7–11) who think that the notion of power is already a causally laden notion. Talk of powers seems to suggest this, since we speak of powers as *causal* powers, which *produce* their manifestations.

<sup>77</sup> Thanks to Henry Taylor for bringing my attention to this work.

mediated by laws (or powers), then it is an instance of metaphysical causation.<sup>78</sup>

However, because of these mutually exclusive characterizations of nomological and metaphysical causation, causation as property manifestation (nomological causation) cannot be a type of grounding (metaphysical causation).<sup>79</sup>

Setting aside the issue of whether or not grounding is causal, there is a second problem to doubt that grounding can account for causation as property manifestation: namely, while grounding involves metaphysical necessity, there are good reasons to doubt that causation as property manifestation does so as well. Indeed, Pure Powers Theorists have readily admitted that the modality involved in property manifestation is weaker than metaphysical necessity. Bird, for example, writes:

Given the presence of the dispositions and the absence of any interferers (finks and antidotes), the stimulus suffices for the effect. This sufficiency is of a subjunctive kind (were the cause to occur, the effect would occur), and so has modal force, but less than full metaphysical necessitation. (Bird 2010)

While Bird thinks that the modality of property manifestation is less than metaphysical necessity, he nonetheless admits that there is a kind of sufficiency (albeit a subjunctive kind) on the part of properties to bring about their manifestations. However, notice that

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<sup>78</sup> Wilson's main argument for identifying grounding as a type of causation is that it best explains the significant similarities between grounding and nomological causation. Briefly, these similarities include the observations that (1) grounding and nomological causation have the same logical properties, and can be challenged in structurally similar ways; (2) both similarly support explanation and counterfactuals; (3) they have the same puzzle cases and theoretical issues when we try to give them a counterfactual analysis; and (4) popular interventionist treatments of nomological causation carry over to grounding (Wilson 2018, 724). An example of (1) pertains to the supposed transitivity of both grounding and nomological causation, which can be challenged by similarly structured cases of pre-emption. Wilson (2018, 727) cites Hall's (2004) example of a hiker who ducks to evade a falling boulder, and subsequently survives. The falling boulder (nomologically) causes his ducking, and the ducking causes his survival, but it is not the case that the boulder causes his survival. For an analogous case of grounding, Wilson cites Schaffer's (2012) example, where a (would be) spherical object *O*'s having a dent grounds *O*'s having a determinate shape *S\**, and *O*'s having a determinate shape *S\** grounds *O*'s being near spherical. Schaffer argues, though, that *O*'s having a dent does not ground its being near spherical.

<sup>79</sup> Nonetheless, even if property manifestation cannot be a type of grounding, grounding can still figure into a general, unified causal explanation of instances of property manifestation. On Wilson's view, since grounding and nomological causation are types of causal explanation, this kind of general causal explanation is possible. For Wilson, two of the benefits of grounding as a type of causation include theoretical parsimony and explanatory unity, precisely because grounding is subsumed (as with nomological causation) under a general causal relation. By contrast, if grounding is non-causal, then an explanation of property manifestation in terms of grounding and nomological causation would be less parsimonious and less unified.

this is under the assumption that there is no interference. Mumford and Anjum deny that causation involves sufficiency/necessity at all precisely because of the possibility of interference. They argue from an antecedent strengthening test of necessity:

If *A* necessitates *B*, then:  
if *A* plus  $\varphi$ , for any  $\varphi$ , then *B*. (Mumford and Anjum 2011, 57; see Schrenk 2010)

Causation (either as property manifestation or the passing of powers) fails this test, for whenever the right dispositional properties are brought together, some kind of interferer can always be added which prevents them from bringing about their effect. A match, for example, may be struck, its wood dry, its tip flammable, and oxygen may be present, but a sudden gust of wind can prevent it from lighting (Mumford and Anjum 2011, 58).

Given that causation, as the manifestation of properties, does not involve metaphysical necessity, the natures of properties cannot ground their manifestations. In other words, the grounding conception of dispositionality cannot be used to ground causation, even if it can be used as part of the explanation for causation. Just because properties ground their dispositional roles, they do not thereby ground causation.

### 6.5.3 Metaphysical Modality

As for metaphysical modality, it seems that a grounding conception of dispositionality cannot explain such modality without circularity. As an example of Powers Theorists who explain modality in terms of powers, Coates cites Borghini and Williams (2008).

Borghini and Williams defend a dispositionalist, actualist account of possibility, according to which, “State of affairs *S* is possible iff there is some actual disposition *d*, the manifestation of which is (or includes) *S*” (Borghini and Williams, 2008).<sup>80</sup> Pruss (2002) also identifies a similar account.

Now, using Borghini and Williams’ account of modality, a proponent of a grounding conception of dispositionality might explain metaphysical modality as follows. A dispositional property *d*, on the grounding conception, is such that its nature grounds (and hence, explains) its occupation of a certain dispositional role. Its occupation of a dispositional role means that the property stands in a causal relation to its manifestation,

which is (or includes) a state of affairs  $S$ .<sup>80</sup> The dispositional role, insofar as it involves a causal relation to  $S$ , explains the metaphysical possibility of  $S$  (via Borghini and Williams' account). Thus, dispositional properties, insofar as they ground their dispositional roles, also explain metaphysical possibility (assuming that explanation is transitive in this case). The problem, though, is that using grounding to explain metaphysical possibility is circular. Grounding, on the standard account, presupposes metaphysical necessity, which presupposes metaphysical possibility.

Vetter (2015) also has a theory of metaphysical modality in terms of dispositionality—or “potentiality,” in her preferred terminology.<sup>81</sup> She defines metaphysical possibility as follows:

It is possible that  $p$  =<sub>df</sub> Something has an iterated potentiality for it to be the case that  $p$ . (Vetter 2015, 197)

By “iterated potentiality,” Vetter includes potentialities to have further potentialities (to have even further potentialities, and so on). The basic idea (like Borghini and Williams) is that a possibility that  $p$  means that there is a potentiality, or disposition, for  $p$ . In developing her theory of potentiality and possibility, Vetter also makes use of grounding in explaining certain dependence relations (e.g., extrinsic potentialities being grounded in intrinsic potentialities). However, while her notion of grounding shares features with the standard account (e.g., such as being related to fundamentality), it is not a modally laden notion as it is typically construed. Whereas grounding is a necessitation relation on the standard account, Vetter avoids characterizing grounding in terms of supervenience or any type of modal notion. Her goal is to formulate a theory of modality, and she recognizes that using an inherently modal notion of grounding would only beg the question (Vetter 2015, 27). If there is any necessity involved in an instance of grounding, it would have to be derived via potentiality.<sup>82</sup>

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<sup>80</sup> Powers Theorists typically think about manifestations as properties, but for the sake of argument, let us say that they are states of affairs which include the properties typically identified with manifestations.

<sup>81</sup> Thanks to Henry Taylor for bringing my attention to this work.

<sup>82</sup> Vetter defines necessity as follows: “It is necessary that  $p$  =<sub>df</sub> It is not possible that not  $p$ ” (2015, 203). In light of the definition of possibility, necessity can alternatively and more precisely be defined as follows: “it is necessary that  $p$  just in case nothing has, or had, or will have a potentiality to be such that not- $p$ ” (ibid.).

Now, if a Grounding Theory of powerful qualities were to involve Vetter's notions of potentiality and grounding, would it be able to account for potentiality (dispositionality) in terms of grounding? Unfortunately, this does not seem to be the case. The main reason is that potentiality, on Vetter's account, is a primitive notion (2015, 3). While she appeals to grounding to explain certain relationships between potentialities, potentiality itself is basic and unanalyzable on her account. A Grounding Theory, then, that adopts Vetter's account of potentiality and grounding obviates any attempt to explain potentiality in terms of grounding.

In sum, Grounding Theory is suited to do some of the theoretical work of pure powers, but not as much work as one might hope. That being said, that it can account for nomic modality and causation is already quite significant. And it seems to me, at least, that philosophers who endorse Dispositional Realism often emphasize accounting for laws and causes more than they emphasize accounting for metaphysical modality. It might be that even if Grounding Theory cannot account for metaphysical modality, this should not be counted against it as a major flaw.

## 6.6 Conclusion

What, then, of Grounding Theories of powerful qualities? Overall, these seem to be one of the more promising versions of the Powerful Qualities View. As discussed earlier, it has notable advantages over other versions of the Powerful Qualities View. In comparison to Martin and Heil's original Identity Theory, it is clearly distinct from both neutral Monism and Pure Powers Theory. And while very similar to Jacobs' Truthmaking View, Grounding Theory has a more robust notion of dispositionality that not only accounts for causal counterfactuals, but also the dispositional roles of properties.

For those sympathetic to Grounding Theory, one should be wary of the extent that it can do the same theoretical work as pure powers. While it can do some of the work, it is limited. It is doubtful that a Grounding Theory can also be a theory of metaphysical modality, because it presupposes a theory of grounding. The proponent of Grounding Theory must provide a separate account of metaphysical modality. More importantly, though, a Grounding Theorist must provide adequate notions of qualitativity and

dispositionality. It does not appear that strongly adequate notions are possible. It seems impossible to come up with comprehensive and divisive notions on which Categoricalists, Pure Powers Theorists, and all kinds of Powerful Qualities Theorists can agree. Instead, the Grounding Theorist will have to settle for weakly adequate notions, being content with disagreement with other Powerful Qualities Theorists. However, while there appears to be a weakly adequate notion of qualitativity (viz.,  $Qualitativity_A$ ), neither Coates nor Azzano have provided a weakly adequate notion of dispositionality. For the Grounding Theorist, determining a weakly adequate notion of dispositionality will be a top priority.

## Chapter 7

### 7 Conclusion: Powerful Qualities Moving Forward

Before writing the present work, I had intended to defend the Powerful Qualities View—Identity Theory, in particular. I was persuaded by Martin and Heil’s defence of what I thought to be, and still think to be, an impressive, ontologically serious, and metaphysically robust theory. I still agree with some of its key insights. I agree, for instance, that there must be room in one’s ontology for both intrinsic powers and qualities—an ontology with only one or the other is too simple. I also agree that there is a strong connection between (at least some) powers and qualities. However, after examining Identity Theory and other versions of the Powerful Qualities View, I am not quite as persuaded as I once was. The source of difficulty is Identity Theory’s central claim, that there is threefold identity between a property, its qualitativity, and its dispositionality. By affirming the existence of both qualities and powers, Identity Theory distinguishes itself from, and gains advantages over, simpler theories such as Categoricalism and the Pure Powers View, which affirm that intrinsic properties are quiddistic/qualitative or powerful, respectively, but not both. However, while it is a more robust theory, Identity Theory is nonetheless an attempt at a monistic, and hence, relatively simple, view of properties, and it tries to maintain a kind of simplicity by way of the threefold identity condition. It is this threefold identity, though, that makes Identity Theory vulnerable to some important problems, such as the risk of incoherence, difficulties in accommodating asymmetries between qualitativity and dispositionality, and threats of collapsing into other views (e.g., neutral Monism and the Pure Powers View). I suggest, then, that while it affirms both intrinsic qualities and powers, Identity Theory is still too simple of a theory, on account of its threefold identity condition.

What kind of theory, then, should a Powerful Qualities Theorist pursue, given that Identity Theory is not feasible? This is the question with which this final chapter will be concerned. However, in section 7.1, I will first discuss a preliminary task that any Powerful Qualities Theorist must take up—namely, the task of formulating adequate notions of qualitativity and dispositionality. As seen throughout the present work, this is

not an easy task, given that the implications of certain notions of qualitativity and dispositionality often lead to undesirable results. This subsection will be a survey of some of the important ways of thinking about qualitativity and dispositionality, discussing some of their advantages and disadvantages.

Section 7.2 will be concerned with the main question regarding the kind of theory a Powerful Qualities Theorist should pursue instead of Identity Theory. Here I make three suggestions. The first two are types of Powerful Qualities Theory: Grounding Theories and Composite Theories. Both kinds of theory maintain that intrinsic properties are both qualitative and powerful. An important advantage of Grounding Theories, though, is that like Identity Theory, they do not require properties to have a certain structure (even though they do not require Identity Theory's threefold identity). As for Composite Theories, while they require complex properties, they are still monistic theories, just like Identity Theory. The third view is Property Dualism. While it is beyond the scope of this chapter to give a complete defence of it, this is the most promising view. Dualism maintains some of the key insights of Identity Theory, but because it is the more ontologically robust view, it has significant advantages over Identity Theory, and even over grounding and Composite Theories.

Section 7.3 will be a brief discussion on laws of nature. While the present work was not chiefly concerned with the topic, it is nonetheless a significant, if not central, issue to the debate on powers. Categoricalists, insofar as they affirm that properties are causally inert, require laws to govern and explain regularities in nature. Insofar as they think that properties have intrinsic natures, not derived from any laws, they maintain that their nomic roles can be swapped across possible worlds. Powers Theorists, by contrast, affirm that properties (or at least a subset thereof) are causally potent and sufficient to explain regularities. Laws, for Powers Theorists, are typically reduced to the second-order relations between powerful properties. Since these second-order relations constitute the identity of powerful properties, there cannot be a difference of laws without a difference of properties. The question, then, regarding the nature of properties is intimately tied to the question regarding the nature of laws. In this section, I will discuss three accounts of laws especially relevant for Powers Theorists in general. I will first discuss the relational



view of laws, which is the standard account among Powers Theorists. I will then discuss a version of the best systems account of laws, adapted for a Grounding Theory of powers. Finally, I will discuss Powers-plus-laws Dualism. While it is beyond the scope of this chapter to defend this third view, it is the most promising. Like Property Dualism (powers plus qualities), Powers-plus-laws Dualism, by being more ontologically robust than rival theories, is able to solve more problems.

In section 7.4, I conclude with brief remarks regarding future research in powers.

## 7.1 Thinking about Qualitativity and Dispositionality

How should a Powerful Qualities Theorist (or any Powers Theorist, for that matter) think about qualitativity and dispositionality? As seen throughout the present work, different philosophers have thought about these notions in various (sometimes radical) ways within the context of a Powerful Qualities Theory. Here are the ways of conceiving these crucial notions encountered in the present work, along with their associated weaknesses.

### 7.1.1 Conceptual versus real distinction

Is the qualitative-dispositional distinction a real distinction or merely conceptual? It is supposed to be at least a conceptual distinction, but if it is merely conceptual, then qualitativity and dispositionality become mind-dependent (Molnar 2003), and the Powerful Qualities View is at risk of collapsing into neutral Monism, according to which the real nature of a property is unknown. However, a real distinction between qualitativity and dispositionality would imply that powerful qualities are complex, having qualitative and dispositional parts which are distinct from each other. Property complexity is not a problem for all accounts of powerful qualities, but it is inconsistent with Identity Theory. Identity Theory maintains not only that qualitativity and dispositionality are not merely concepts, but also that there is no real distinction between them—and further, that there is no real distinction between qualitativity, dispositionality, and the property itself. For Identity Theorists, one can see a property as a quality or as a power by way of partial consideration. The *whole* property (rather than any parts of the property) is seen as either a quality or a power. However, if a property's qualitativity and dispositionality are not merely concepts, and if there is supposed to be no real distinction between them, nor with

the property itself, the difficulty, then, consists in showing how a property can be wholly and objectively qualitative, yet also wholly and objectively dispositional, all the while avoiding incoherence. There would not be as much difficulty for the theory had it not required the threefold identity between a property, its qualitativity, and its dispositionality.

### 7.1.2 Graded versus non-graded

While this way of considering the distinction is not prominent among Powerful Qualities Theorists, Martin's (1997) Limit View is suggestive of this. On the Limit View, every property falls somewhere on a spectrum or line, where pure qualitativity and pure dispositionality are the limits. This can be taken to suggest that properties can be more or less qualitative or dispositional (although Martin himself denied that qualitativity and dispositionality are a matter of degree). While no one today (as far as I am aware) defends this view, it is nonetheless another way of considering the qualitative-dispositional distinction. Defenders of this way of thinking of the distinction should keep Armstrong's (1997) objection in mind, that there should be an explanation as to whether the connection between a property's qualitativity and dispositionality is contingent or necessary. On the other hand, some will be suspicious of the distinction in these terms, since they find it intuitively implausible that being qualitative or dispositional is a matter of degree.

### 7.1.3 Ontological robustness

We have reviewed already the notion that qualitativity and dispositionality are partial considerings of whole properties, and insofar as this is taken to mean that they are mind-dependent, they turn out to be ontologically lightweight. The notion that they are limits that can be approached in degrees can be taken to mean that they are more ontologically robust than mind-dependent concepts, although this might be variable.

As for other theories, on the Dual Aspect Account (Giannotti 2021), qualitativity and dispositionality are supposed to be ontologically negligible aspects. Aspects, according to Giannotti, are supposed to be a property's ways of being, which supervene on the property. He infers that because they supervene on the property, they are non-entities, and

hence, they are ontologically negligible. However, he is mistaken about the nature of supervenience. Supervenience does not imply that the supervenient is a non-entity. Rather, in some cases, the supervenient is an entity in addition to the subvenient entity, such as the case of internal relations, which supervene on the natures of their relata. In other cases, the supervenient is identical to the subvenient entity, as in the case of wholes and their parts. So then, just because aspects supervene on properties, it does not follow that they are non-entities. Still, aspects might nonetheless be relatively ontologically lightweight, if they are identical to the properties on which they supervene (rather than being additional entities).

A more robust view of qualitativity and dispositionality maintains that they are second-order properties of properties. This position might be an attractive possibility for those who are sympathetic to the idea that qualitativity and dispositionality are a property's ways of being. If first-order properties are the ways of being of particular objects, then if qualitativity and dispositionality are ways of being of particular properties, then it makes sense to think of them as second-order properties. While no one in the literature defends this view, it might be worth considering.<sup>83</sup> However, a Powerful Qualities Theory that adopts this view of qualitativity and dispositionality might be in danger of collapsing into neutral Monism, the compound view, or even Dualism, depending on how the theory is fleshed out.<sup>84</sup>

On an even more robust view, qualitativity and dispositionality are parts of a property, which is what the Compound View maintains. And on the most robust view, qualitativity and dispositionality are their own categories of property, which is what Dualism maintains. While both views are less parsimonious than other Powerful Qualities

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<sup>83</sup> Martin and Heil (Martin and Heil 1999; Heil 2003; Heil 2005) have argued against the notion of dispositionality as a higher-order property. However, as far as I am aware, they do not discuss the idea of both qualitativity and dispositionality as higher-order properties. Perhaps, though, the resulting position would be problematic just as neutral Monism is problematic.

<sup>84</sup> If one thinks of a property as a nature in addition to its qualitativity and dispositionality, yet is agnostic about what exactly it is, then the view becomes a kind of neutral Monism. If one thinks of a property as a combination of its qualitativity and dispositionality, then the view becomes a kind of Compound View. Finally, one might argue that it is unnecessary to identify qualitativity and dispositionality as second-order properties. Instead, one might prefer to treat them as first-order properties in their own right—in which case, the view becomes a kind of Dualism.

Theories (Dualism especially, to the point that it is its own category of property theory), they avoid typical problems associated with Identity Theory.

#### 7.1.4 Property identity

On this conception, qualitativity and dispositionality are a matter of property identity. Qualitative properties are individuated intrinsically or primitively, whereas dispositional properties are individuated either extrinsically, in relation to other properties, or intentionally, with respect to properties they are directed toward. If powerful qualities are individuated extrinsically or intentionally (as per Identity Theory), they risk being indistinguishable from pure powers. If they are individuated intrinsically or primitively (as per the Truthmaking View and Grounding Theories), they avoid the collapse into pure powers, but an explanation should be provided regarding the connection between their intrinsic natures and their associated dispositional profiles. If they are individuated both extrinsically and intrinsically (as per Williams' compound view), the problem is the overdetermination of property identity.

#### 7.1.5 Modality and recombability

On this conception, the qualitative-dispositional distinction is a matter of a property's being able to take on different causal or nomic roles in different possible worlds. Categorical properties can be divided into mere quiddities (non-qualitative properties) and qualities. Mere quiddities bear no necessary connections to any causal or nomic roles, and so can be recombined in any which way across possible nomic environments. Qualities, on the other hand, are necessarily connected to certain roles precisely because of their qualitative natures. Powerful Qualities Theories are inconsistent with mere quiddities, and instead they maintain that properties are qualities. Dispositional properties are also necessarily connected to certain dispositional roles, but the connection is stronger. Qualities, while necessarily connected to at least some dispositional roles, might be contingently connected to others. Thus, a quality can take on different roles in different worlds while remaining the same quality. A dispositional property, however, cannot swap, gain, or lose any dispositional roles across worlds while also remaining the same property. This is because the modal (recombability) conception of the qualitative-

dispositional distinction assumes that the identity (individuation) distinction holds as well (see Smith 2016, 240).

Some philosophers have taken the distinction between qualitative and dispositional properties to be simply the distinction between non-modal and modal properties, respectively (see Place 1996a). On this conception, identity versions of the Powerful Qualities View become incoherent. Non-identity versions are not incoherent on this count, but overdetermination might be a problem if properties are individuated both by their modal and non-modal parts. However, if we distinguish between mere quiddities, qualities, and powers, then identity versions need not be incoherent. Since qualities arguably have necessary connections to certain dispositional profiles, then we need not say that a powerful quality is both a modal and non-modal property. (It would be incoherent, by contrast, to claim that a property is both a power and a mere quiddity—that would be to affirm that it is both a modal and non-modal property.) However, if qualitativity is a modal notion, a task, then, is to distinguish powerful qualities from pure powers and moderate forms of Quidditism.

### 7.1.6 Causality and counterfactual support

This has to do with dispositionality directly, but qualitativity indirectly. At the very least, Powerful Qualities Theories think that properties, insofar as they are powerful, are able to support causal counterfactuals. They should at least be of a nature suitable to be (part of) the truthmaker for such counterfactuals. For Jacobs (2011), a property's qualitative is such a suitable nature. However, Dispositional Realists think of properties in a more robust sense: not only are properties supposed to support causal counterfactuals, they do so *because* they have causal natures or roles. Jacobs' Truthmaking View uses a semantic notion of dispositionality as a minimum standard for being powerful, but this fails to distinguish the Truthmaking View from kind of Quidditism. Properties on other kinds of Powerful Qualities Views (e.g., Identity Theory, Composite Theories, Grounding Theories) use more robust notions of dispositionality, which require properties to occupy certain causal roles, or even have dispositional essences which are constituted by such roles.

### 7.1.7 Ordered versus non-ordered

Identity Theory, as formulated by Heil, requires not only that a property be identical to its qualitativity and dispositionality, but also that qualitativity and dispositionality be identical to each other. Because of their identity, there cannot be a fundamental ordering between qualitativity and dispositionality. Grounding Theories, however, impose an order, and the same might be said of the Truthmaking View. To be sure, Grounding Theories and Heil-style Identity Theories both affirm that a property is both qualitative and dispositional without thereby implying that it has corresponding parts. In light of this, both theories can be considered Identity Theories. The difference is that proponents of Heil-style Identity Theories also want to say that there is no real difference between qualitativity and dispositionality, that they are the same thing. By contrast, qualitativity and dispositionality cannot be the same thing on Grounding Theories—since the former grounds the latter, the former cannot be identical to the latter, at least on the standard account of grounding. On the Truthmaking View, since a property’s qualitativity explains its dispositionality (i.e., its being able to support certain counterfactuals), then depending on the kind of explanation involved (e.g., grounding), it might be that its qualitativity cannot be identical to its dispositionality.

## 7.2 Alternatives to Identity Theory

If Identity Theory is not feasible, what kind of theory should a Powerful Qualities Theorist pursue? Here I discuss three alternatives: Grounding Theories, Composite Theories, and Dualism. Of the several kinds of Powerful Qualities Theories discussed in the present work, it seems that Grounding Theories and Composite Theories are the most plausible. However, more plausible still is Dualism. Although I have not discussed it at length in this work, it is this view that I recommend to the Powerful Qualities Theorist, over and above the Powerful Qualities View itself.

### 7.2.1 Grounding Theories

By a *Grounding Theory*, I mean any monistic view of properties that entails that properties are both qualitative and powerful, where properties are qualitative insofar as they are individuated by their intrinsic natures, and powerful insofar as they have natures that ground their causal roles.

Grounding Theories have several advantages. Firstly, they share some of the intuitions involved in Identity Theory. They maintain that properties are both powerful and qualitative, without thereby requiring that properties be complex. Furthermore, insofar as a property's dispositionality has to do with grounding its causal roles, Grounding Theories involve a robust notion of dispositionality that does not simply involve making causal counterfactuals true. Also, like Identity Theory, Grounding Theories can maintain that there is a necessary connection between qualitativity and dispositionality—perhaps it is because a property is the quality that it is that it grounds the causal roles that it does.<sup>85</sup>

Secondly, Grounding Theories improve upon Identity Theory in several respects. Grounding Theories have an easier time to maintain that qualitativity and dispositionality are both objective and consistent. Identity Theory, on the other hand, is vulnerable to the objection that these features are mind-dependent. And while Identity Theory maintains that qualitativity and dispositionality are identical, and therefore consistent, it is difficult to explain why this is the case. Furthermore, while Identity Theory is in danger of collapsing into the Pure Powers View, Grounding Theories do not have this problem, since such theories individuate properties by their intrinsic natures (even if their dispositional roles are individuated extrinsically). And finally, Grounding Theories, unlike Identity Theory, satisfy the intuition that qualitativity explains dispositionality, since they maintain that the former grounds the latter.

Despite its advantages over Identity Theory, Grounding Theories have some disadvantages that need to be addressed. The main thing is that a proponent of a Grounding Theory needs to produce adequate notions of qualitativity and dispositionality, especially as to avoid collapsing into moderate forms of Quidditism. Furthermore, when it comes to fundamental physical properties, the best science does not

<sup>85</sup> This is an essentialist take on the connection between qualities and dispositional roles, but a Grounding Theorist might think instead that the connection is brute (see Azzano 2020).

reveal any qualitative properties, nor is it clear that such properties are necessary.<sup>86</sup> By positing that every property is qualitative, Grounding Theories posit something beyond the scientific evidence. That in itself is not a disadvantage if what is posited offers a further advantage, but it is not clear that positing qualitative properties at the fundamental physical level offers such (see Williams 2019).

Now, there are some other noteworthy features of Grounding Theories that may or may not be advantageous or disadvantageous to the theory. Such theories appeal to grounding in order to explain the nature of properties, but grounding is controversial and may or may not be desirable depending on one's ontology. Also, given the standard account of grounding, the qualitativity and dispositionality of a property are ordered, the former being more fundamental than the latter. This is in contrast to Identity Theory, which takes it that a property's qualitativity and dispositionality are identical to each other, and hence, one is not more fundamental than the other. Finally, Grounding Theories can also accommodate multiple realizability, without thereby requiring another category of properties. Identity Theory eschews multiple realizability, given that dispositional roles play a part in the individuation of properties, but since the same does not hold for Grounding Theories, it is open to the Grounding Theorist whether or not to affirm multiple realizability.

### 7.2.2 Composite Theories

By *compound views* or *Composite Theories*, I mean any monistic view of properties that entails that properties are qualitative and powerful, where every property is composed of a qualitative part (or character) and a dispositional part (or profile). Here I take Williams (2019) as representative of Composite Theories.

Like Grounding Theories, Composite Theories theories share some of the key intuitions of Identity Theory, while also improving upon Identity Theory. Like Identity Theory,

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<sup>86</sup> Consider mass and charge. Both properties can be characterized with respect to the relevant laws (Newton's law of gravitation and Coulomb's law, respectively). Alternatively, gravitational mass can be described as "the power of an object to generate gravitational fields," and charge as "the power of a body to produce electromagnetic fields" (Ellis 2002, 47). However, physics does not reveal any qualitative properties at the fundamental level that might ground or correspond to mass, charge, and other such (apparently) dispositional properties.



Composite Theories affirm that properties are both qualitative and powerful, and that properties are powerful in a sense more robust than simply making causal counterfactuals true. Also, like Identity Theory, for Composite Theories, a property's qualitativity and dispositionality are connected by necessity. A property, on Composite Theories, has the qualitative and dispositional characters that it has because that is just what it is to be the property that it is. Furthermore, it maintains that every qualitative character and dispositional profile is unique to the property to which it belongs. (This also means that dispositionality cannot be multiply realizable.) The difference is that for Identity Theory, qualitativity and dispositionality are bound by the necessity of identity. Finally, like Identity Theory, Composite Theories can maintain that a property's qualitativity and dispositionality are equifundamental, neither one being reducible to the other.

Besides the similarities, Composite Theories have advantages over Identity Theory. For one, it is easier for Composite Theories to maintain that qualitativity and dispositionality are objective features of a property. Secondly, since qualitativity and dispositionality are distinct parts, Composite Theories avoid charges of incoherence. Thirdly, because they maintain that properties are only partly dispositional in nature, Composite Theories do not collapse into Pure Powers Theories.

As for disadvantages, one is that, on Composite Theories, properties are complex. While Composite Theories are monistic views of properties, they require properties to be composed of parts. This is in contrast to Identity Theory and Grounding Theories, which maintain (or are at least consistent with) simple properties. However, the Composite Theorist need not maintain that the parts are themselves subsistent properties—if they were, Composite Theories would collapse into Dualism. Besides their complexity, properties, on Composite Theories, have their identities overdetermined. Since a property's qualitative and dispositional character are both unique to a property, either is sufficient by itself to fix the property's identity. Moreover, in contrast to Grounding Theories, it is not clear how Composite Theories can accommodate the intuition that qualitativity explains dispositionality. Finally, like Grounding Theories, Composite Theories posit more to the nature of properties than what is revealed at the fundamental physical level.

### 7.2.3 Dualism

While it is beyond the scope of this chapter to give a complete defence of it, Dualism is a more plausible alternative to Identity Theory in particular, and to the Powerful Qualities View in general. Dualism is the view that there are two kinds of intrinsic properties: qualities and powers. An obvious objection to Dualism, when compared to Identity Theory (and other Powerful Qualities Theories), is that it is less parsimonious. However, as suggested earlier, Identity Theory is too simple of a theory. The additional robustness of Dualism, as we shall see, allows it to have significant advantages over Identity Theory, and even over grounding and Composite Theories. What might be considered by others to be a drawback, is for the Dualist, a small price to pay.

How, then, does Dualism compare to Identity Theory? Well, like Identity Theory, Dualism recognizes that there are indeed qualities and powers, but Dualism considers these to belong to separate categories of properties. Dualism can also accommodate powers in a robust sense. And while Dualism can be formulated in a number of ways, it is possible for Dualism, like Identity Theory, to maintain a necessary connection between qualities and powers. Perhaps the Dualist can appeal to the grounding relation as the necessary connection.

However, besides their similarities, Dualism has significant advantages over Identity Theory. For one, it is easier to maintain the objectivity of powers and qualities on Dualism than on Identity Theory. There is no need, on Dualism, to make use of the partial consideration strategy, and hence, risk the objectivity of powers and qualities. Secondly, Dualism can avoid collapsing into the Pure Powers Ontology, because it affirms qualities as a separate category of properties. Thirdly, Dualism can accommodate the intuition that powers are explained by qualities (although perhaps not at the fundamental physical level). Fourthly, Dualism does not need to posit properties beyond what fundamental physics reveals. This is an advantage not only over Identity Theory, but over grounding and Composite Theories as well. Unlike Dualism, these latter theories require that all properties be qualitative, but physics does not reveal such properties at the fundamental

level. Because Dualism can accommodate purely dispositional properties, Dualism need not conflict with fundamental physics.

Again, while I do not intend to give a complete defence of Dualism here, it will be worth mentioning two important tasks in defence of the theory. Firstly, the Dualist must specify the distinction between qualitative (or categorical) properties and dispositional properties. Secondly, the Dualist must specify the relationship between qualitative properties and dispositional properties. Depending on how these are done, Dualism will be vulnerable to certain disadvantages, some of which are shared with some of the other theories. For example, a Dualism that maintains that qualitative properties are causally relevant (cf. Molnar 2003) might threaten to collapse into a Pure Powers Ontology, depending on just how causally involved categorical properties are. Or a Dualism that appeals to grounding to explain the relationship between qualities and dispositions introduces the grounding relation into the overall ontology, making it even less parsimonious. The same can be said for a Dualism that makes use of laws.

### 7.3 Thinking about Laws of Nature

Finally, how should a Powers Theorist (power qualities theorist or otherwise) think about the laws of nature? Laws of nature are posited not only to explain certain behaviours of things, but to explain regularities in nature. Laws are used to distinguish between genuine, natural, law-like regularities from accidental regularities. Law-like regularities are those that are covered or governed by a corresponding law of nature, whereas accidental regularities are not. That middle-sized objects attract each other to a certain degree is a law-like regularity because it is governed by Newton's law of gravitation. On the other hand, that you take a smoke break while I make cup of tea right at noon everyday is an accidental regularity—there is no law that governs these results.

Powers and laws are intimately connected, especially for the Powers Theorist. Here I discuss three views on the relationship between powers and laws: the relational view, the best systems account, and Powers-plus-laws Dualism, which is the most convincing of the three.

### 7.3.1 Relational view

For the Dispositional Realist, laws somehow “flow” from powers, such that once powers are fixed, then so are the laws. The standard way of explicating this idea is simply to identify laws with the second-order relations that hold between properties. These are the very same second-order relations that individuate powers and constitute their essences. A few quotations are illustrative of the idea:

But such relationships between properties look uncommonly like laws. Indeed, I suggest, the essential features of properties simply are (or at least include) their relations of nomic implication to each other. This means that a given property is what it is in virtue of its lawful relations to other properties, while these are what they are in virtue of their further nomic relations, including the ones to the original property. (Swoyer 1982, 214)

Causal laws are nothing more than relations between casual properties. (Chakravartty, 2007, 150)

If properties have a dispositional essence then certain relations will hold of necessity between the relevant universals; these relations we may identify with the laws of nature. (Bird 2007b, 43)

For Powers Theorists like Swoyer, Chakravartty, and Bird, the relations between powers which constitute their identity, are indeed identical to the laws of nature. In this way, laws easily “flow” from (or rather *are*) the second-order relations between properties. While this is a reductive account of laws (as compared to Armstrongean laws), it is nonetheless a realistic account—laws are real, but they happen to be identical to second-order relations between properties, rather than as a further distinct category of being.

Furthermore, on this account, laws are imbued with metaphysical necessity—worlds with different properties would necessarily have different laws, since laws are constitutive of properties.

However, Barker and Smart (2012) have identified a governing problem for the relational view. Recall that laws are supposed to explain law-like regularities. The problem, though, is that that on the relational view, laws are second-order relations, but regularities are

first-order instantiation distributions. A law and a corresponding regularity are distinct facts, and so there is an explanatory gap regarding how the former necessitates (or otherwise constrains) the latter. One might posit a third-order fact to fill in the gap, but then there would be a further explanatory gap between the third-order fact and regularity, and so on.<sup>87</sup>

### 7.3.2 Best systems analysis

While Powers Theorists are often sympathetic to the relational view of laws as just described, the relational view is not the only theory of laws available for an ontology of powers. Kimpton-Nye (2021), for example, proposes a best systems view for a Grounding Theory of powers. Kimpton-Nye agrees with Tugby's (2012) Qualitative Dispositional Essentialism, according to which properties are qualities with intrinsic natures, yet which ground certain dispositions in virtue of their qualitative natures (cf. Coates 2020). Tugby proposed this account as way of coming up with a Dispositionalist account of properties that also satisfied Barker and Smart's governing problem. The key idea on Qualitative Dispositional Essentialism is that the governing role is located not at the level of second-order relations, but at the level of first-order property instantiations. For Tugby (and Kimpton-Nye), the qualitative differences of properties ultimately explain the presence of law-like regularities. Tugby writes:

The qualitative differences among things would, in short, replace the second-order [stimulus-manifestation] relations in the ultimate *explanans* for why first-order entities are disposed to bring about the new property instantiations that they are. The qualities of things would therefore play the governing role, if one wanted to call it that, rather than the second-order relations. The governing claim would amount, on this view, to the idea that the property distributions at one time constrains which new property instantiations are to follow (or, in an indeterministic world, they constrain which new property instantiations are likely to follow). Importantly, since these 'governors' are present at the first-order level, the gap which gave rise to the ultimate regress problem on the monistic view—between the second-order governing level and the first-order level—is closed. Moreover, this view is more in line with the Dispositionalist intuition that it is the local property instances themselves which are the source of the causal 'biff' in the world. (Tugby 2012, 727)

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<sup>87</sup> *Mutatis mutandis*, such also is the argument against the Armstrongean view of laws.

But if first-order property instantiations play the governing role, what then should laws be on a Grounding Theory of properties? Instead of the relational view, Kimpton-Nye proposes a best systems analysis. Lewis (1973; 1983) had proposed a prior version of this, according to which laws are the axioms of a deductive system that has the optimal balance of strength and simplicity. The difference with Kimpton-Nye's account is that “instead of just systematizing the spatiotemporal distributions of properties at the actual world, laws . . . are axioms of the strongest, simplest systematization of actual and metaphysically possible property distributions” (Kimpton-Nye 2021, s.3.2).

This account, according to Kimpton-Nye, shares features with the more typical relational view. Just as the relational view maintains that laws are metaphysically necessary, so does Kimpton-Nye's best system analysis. By systematizing all metaphysically possible property distributions, the laws, on this account, turn out to be metaphysically necessary. Furthermore, just like the relational view, Kimpton-Nye's best system analysis is a reductive account of laws. On both views, properties are determined by powerful properties.

However, Kimpton-Nye argues that the best system analysis is superior to the relational view, for two main reasons. Firstly, it is continuous with scientific practice. In his original best systems analysis, Lewis derived the idea of balancing strength and simplicity from actual scientific practice (see Lewis 1983, 367; 1986, 123). The same is true of Kimpton-Nye's account. He writes:

Scientists use strength and simplicity as epistemic guides in the *discovery* of laws; the strongest, simplest statements about how the world is are assumed most likely to be the laws of nature. The QDE-BSA [i.e., Qualitative Dispositional Essentialism-Best Systems Analysis] . . . takes the scientists' epistemic principles and makes them constitutive of laws. In this way, the QDE-BSA achieves continuity with actual scientific practice by sticking close to the scientific understanding of laws and by ensuring the epistemic accessibility of the laws via scientific methods, which is [sic] good at *discovering* strong, simple statements about the world. (Kimpton-Nye 2021, 3438)

Laws on the relational view, on the other hand, are discontinuous with scientific practice. On the relational view, laws are highly specific, and thus, they are not very informative taken individually. Taken collectively, while they would be very informative, they would

be nonetheless be too complex to be useful. There is the worry about the accessibility of laws on the relational view. He writes:

But the contribution made by any given M-relation [i.e., manifestation relation] to the most general goings on in the world is likely to be intimately tied up with its interactions with a whole host of other M-relations. It is not obvious that we should be able to easily isolate and (epistemically) identify particular M-relations independently of the whole tangled web of M-relations which as a whole is responsible for the regularities we observe in nature. (Kimpton-Nye 2021, 3438)

While scientific practice involves the discovery of strong and simple laws about the world, laws on the relational view lack strength individually and simplicity collectively, and they risk being epistemically inaccessible, so Kimpton-Nye argues.

The second advantage of Kimpton-Nye's best systems analysis is that, compared to the relational view, it is more pragmatic in terms of predictive utility. A law of nature should be useful for humans in making predictions, and laws on the best system analysis, according to Kimpton-Nye, are useful in this regard. For the same reasons it fails to be continuous with scientific practice, the relational view of laws fails to be pragmatic for predictive utility: individual laws are too specific; laws taken together are too complex so as to be unwieldy; and it is not clear that we have epistemic access to the laws.

However, I have two quick reservations about Kimpton-Nye's best system analysis. Firstly, just as in Lewis' account, there is the danger that laws might be too subjective on this account. It is not clear that there is a system with an objective, optimal balance of strength and simplicity. Secondly, the accessibility of laws is doubtful if they are supposed to cover not only the property distributions of the actual world, but all metaphysically possible worlds. It is not obvious that we have a good grasp of what happens across all metaphysically possible worlds, and insofar as this is true, it is doubtful that we can have access to the laws, as construed by Kimpton-Nye. Furthermore, when we consider what is metaphysically possible, we often assume what the laws

already are.<sup>88</sup> It seems trivial to say that the laws we discover are the ones we already assumed in order to discover them in the first place.

### 7.3.3 Powers-plus-laws Dualism

One more position that a Powers Theorist should consider is the Powers-plus-laws Dualism defended by Ioannidis, Livanios, and Psillos (2021). Powers Theorists tend to argue for an ontology of powerful properties with laws reduced to the relations between these properties (the relational view). On the other hand, Categoricalists tend to argue for an ontology of powerless properties with laws as a separate category of being, which govern the powerless properties. Ioannidis, Livanios, and Psillos defend an ontology of both powers *and* laws.

At the outset, the most obvious objection to Powers-plus-laws Dualism is that it is less parsimonious than the typical relational view. Powers Theorists usually want to reduce laws to the second-order relations that hold between powers, or in some cases, get rid of laws altogether (see Mumford 2004). However, as with Powers-plus-qualities Dualism, an inflationary ontology can be justified to the extent that it solves problems better than its reductive and eliminative counterparts. Ioannidis, Livanios, and Psillos convincingly argue that Powers-plus-laws Dualism does just that. I will not discuss here the entirety of their argument, but only the reasons most relevant for the Powers Theorist.

Firstly, there is a problem of derivation. The main idea is that whereas on the relational view powers are represented as universally generalized conditionals in qualitative terms, actual scientific laws (e.g., Coulomb's law) are specified in quantitative-mathematical terms. The problem is that there seems to be no satisfactory way of deriving the former from the latter.

Secondly, it is difficult for the relational view to explain all nomic notions in contemporary science, such as conservation laws. For one, conservation laws hold for

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<sup>88</sup> Otherwise, it is difficult to understand what constrains metaphysical possibilities, unless perhaps one is willing to assert (following Russell, for example) that basic principles of logic constrain what is metaphysically possible (e.g., a thing cannot both be and not be). Thanks to Robert DiSalle for this point.



closed systems of particles, whereas laws on the relational view are derived from individual properties. Also, it is not clear how the relational view can provide a unified account of conservation. Conservation holds over many different physical properties, but the only thing that these seem to have in common is that they are physical properties. Lastly, conservation laws are needed to ground certain phenomena. Consider the example of an interaction between two charged particles. The conservation law applies to their interaction, but the law does not “flow” from the essence of charge. Conservation laws, in addition to dispositional essences, are required to govern the behaviours of properties (in this case, charged particles).

Thirdly, the relational view has difficulty accommodating fundamental symmetries. Like conservation laws, symmetries posit extra constraints on the behaviours of properties which go beyond their dispositional essences.

Fourthly, the metaphysical necessity of laws on the relational view stands in contrast to actual scientific practice in some cases. Ioannidis, Livanios, and Psillos summarize the problem neatly:

Scientists often appeal to counterfactuals having antecedents opposed to actual laws or counterfactuals having antecedents that contain laws in which fundamental constants (which current physics cannot fully determine) take on values that differ from the actual ones. But if there are no law-violating possibilities, then counterlegals will be vacuously true. It is, to say the least, not clear how vacuously true propositions can have any impact in actual scientific work. (Ioannidis, et al. 2021, 10/26)

The significance of this last point should not be missed. It is not merely that the relational view does not support what scientists happen to do. More importantly, it stands in contrast to a mode of scientific reasoning itself that is necessary for doing good science in certain fields.<sup>89</sup>

## 7.4 Conclusion

Categoricalism, as an ontology of properties that admits only qualities (or quiddities), is too simple—but so is the Pure Powers View, an ontology that admits only powers. The

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<sup>89</sup> Thanks to Robert DiSalle for this point.

Powerful Qualities View is a richer ontology than both Categoricalism and the Pure Powers View, and as such, promises to overcome the problems associated with these ontologies. However, like Categoricalism and the Pure Powers View, the Powerful Qualities View tries to maintain a kind of simplicity, insofar as it is a monistic theory of properties. This is especially true of Identity Theory, which attempts to maintain a very parsimonious ontology with its threefold identity condition. As discussed in this work, however, this proves to be problematic for the view.

While parsimony is a desideratum for any theory, a robust theory should be preferred over a parsimonious theory, if it solves problems that we could not otherwise solve using the parsimonious theory. In the case of Identity Theory, and the Powerful Qualities View in general, this seems to be the case. Dualism, while more robust than the Powerful Qualities View, can solve more problems because it is the more robust theory. The result is also an ontology that is open to a better integration between metaphysics and our best science.<sup>90</sup> Dualism is better equipped than rival theories to accommodate, for example, fundamental physical properties, and perhaps even new properties that science may discover.

The same applies to the issue of laws. The preference for parsimony is evident when Powers Theorists reduce or eliminate laws. However, by admitting an ontology of both powers and laws, power-plus-laws Dualism solves important problems associated with the standard relational view, and thus, is also more suited for integrating metaphysics and science.

Further work on powers should involve the serious consideration of more robust powers ontologies. While monistic powers ontologies have their advantages, the development of Dualistic ontologies might be a more promising way, not only to maintain the key advantages of monistic theories, but also to solve the difficulties that monistic theories struggle to answer. This seems to be the approach Martin and Heil had when they first developed Identity Theory: by developing a more robust ontology, Identity Theory was

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<sup>90</sup> It is not that science should dictate what metaphysics can and should do, but we trust our best scientific theories, and at the very least, we should not want an ontology that conflicts with them. Thanks again to Robert DiSalle for this point.

an attempt to account for more phenomena and to solve more problems than could rival theories. Perhaps future work on powers, insofar as they involve the development of even more robust ontologies, can do likewise to a greater degree.

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## Appendix

### Further Problems for Grounding Conceptions of Dispositionalism

Besides their inadequacy, Dispositionalism<sub>C</sub> and Dispositionalism<sub>A</sub> are vulnerable to other problems. The result is that even for Dispositional Realists (whether Pure Powers Theorists or Identity Theorists) who accept grounding, there are reasons to doubt their acceptability (other than their non-divisiveness).

*Against Dispositionalism<sub>C</sub>.* According to Dispositionalism<sub>C</sub>, the nature of a property grounds its occupation of certain dispositional roles. However, a Pure Powers Theorist might argue that grounding goes the other way. Suppose that identity-dependence is a grounding relation (see Thompson 2016; Yates 2018). A Pure Powers Theorist might argue that dispositional roles ground properties, since property identity depends on dispositional roles. And since grounding (on the standard account) must be asymmetrical, then it cannot also be the case that properties ground their dispositional roles.<sup>91</sup> Now, it is beyond the scope of this chapter to defend this view, but it seems to have some initial plausibility, since it is a straightforward account of how a Pure Powers Theory might involve grounding. It is a straightforward account insofar as it uses standard, commonly accepted ideas (e.g., the relational individuation of properties, the asymmetry of grounding). The possibility of this view shows that even if Pure Powers Theorists accept grounding, they might still reject Dispositionalism<sub>C</sub>. This is also yet another reason to doubt the adequacy (weak or strong) of Dispositionalism<sub>C</sub>.

*Against Dispositionalism<sub>A</sub>.* Dispositionalism<sub>A</sub> leads to a regress, and while there are solutions to the regress, such solutions present issues for Dispositional Realists who accept the standard account of grounding. The regress is this. Suppose that there is an object *o* with dispositional property *p<sub>i</sub>*. According to Dispositionalism<sub>A</sub>, it is in virtue of

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<sup>91</sup> Yates (2018) defends a kind of Pure Powers Theory on which the causal structure that individuates powers also grounds powers, since individuation is a kind of grounding relation. The theory, however, goes further and also maintains that powers ground the causal structure. The theory, thus, requires the possibility of symmetrical grounding, as opposed to standard asymmetrical grounding.

possessing  $p_1$  that  $o$  is assigned a certain dispositional profile. In other words, it is in virtue of  $p_1$  that  $o$  possesses another dispositional property  $p_2$ . But if  $p_2$  is dispositional, then it is in virtue of possessing  $p_2$  that  $o$  possesses another dispositional property  $p_3$ , in virtue of which  $o$  possesses another dispositional property  $p_4$ , and so on. Dispositionality<sub>A</sub> seems to lead to an infinite regress of properties.<sup>92</sup>

There are a few ways to try to stop the regress. One way is to argue that the chain of grounded properties terminates in a property that grounds only itself. For example, suppose that  $o$  possesses  $p_1$ , which grounds  $p_2$ , and  $p_2$  grounds only itself and no other property (even if in this case, it can be grounded by a property other than itself, viz.,  $p_1$ ). Or more immediately, suppose that  $o$  possesses  $p_1$ , and  $p_1$  simply grounds itself. A second way is to argue that the chain of grounded properties, while finite in the number of properties involved, is circular in structure. Suppose that  $o$  possesses  $p_1$ , which grounds  $p_2$ , which grounds  $p_3$ , and so on until  $p_n$ , which grounds  $p_1$ . Either way, an infinite regress of properties is avoided, but both ways of stopping the regress require an unorthodox view of grounding. Grounding, on the standard account, is supposed to be irreflexive (a grounding entity cannot ground itself), but the two ways of stopping the regress require reflexive grounding. Reflexivity is obvious in the first way, since it supposes a self-grounding property.<sup>93</sup> In the second way, the reflexivity occurs via transitivity: the first property grounds itself via the properties in the grounding chain. The second way also requires symmetrical grounding, since  $p_1$  grounds  $p_n$  (via the grounding chain), and  $p_n$  directly grounds  $p_1$ .

A third way is to distinguish between dispositional properties and the dispositions they ground. On this strategy, while dispositional properties fully grounds their respective

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<sup>92</sup> This grounding regress should be distinguished from the notion of multi-track dispositions, i.e., dispositions that have multiple or even an infinite number of possible manifestations. Someone might wonder whether the regress should even be a problem for certain Dispositional Realists, since some of them accept multi-track dispositions. Martin (2008), for example, thought that a single power can make an object ready for an indefinite/infinite number of possible manifestations. The difference, though, between the regress and a multi-track disposition, is that the regress generates an infinity of properties, whereas a multi-track disposition is only a single property that may have an infinity of possible manifestations.

<sup>93</sup> There is arguably also an overdetermination problem in this case, since  $p_2$  is grounded both by  $p_1$  and by itself.

dispositions, the dispositions do not further ground other dispositional properties or dispositions. (The assumption here is that dispositions, unlike dispositional properties, are not dispositional in the same sense of grounding further dispositions). While this eliminates the regress, it does seem a bit suspicious in the context of a realist theory of dispositions. For the Dispositional Realist, how is a disposition any different from a dispositional property?<sup>94</sup> At any rate, this strategy requires that the Grounding Theorist provide some account of the distinction between dispositions and dispositional properties, if a coherent account can be given. There is also a further worry that if an account of dispositions is too ontologically robust, it might just entail that dispositions are their own kind of property, yet somehow distinct from dispositional properties. But this might collapse into a kind of Dualism, where there are powerful qualities (qualitative, dispositional properties) on the one hand, and dispositions on the other. This result is incompatible with a Grounding Theory, where an Identity Theory is a monistic account of properties.

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<sup>94</sup> Some Pure Powers Theorists, for example, do make the distinction (see Borghini and Williams 2008), but not all of them do (see Bird 2007a, 18).

## Curriculum Vitae

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- 2017 Planning Committee, Referee, Commentator  
PhilMiLCog Graduate Student Conference  
University of Western Ontario, London, ON. June 15–17.
- 2016 Planning Committee, Referee, Commentator  
PhilMiLCog Graduate Student Conference  
University of Western Ontario, London, ON. May 19–21.

## Graduate Teaching Assistantships

### University of Western Ontario

PHIL 1040	Ethics, Law, and Politics	F 2017, W 2021
PHIL 1200	Critical Thinking	Y 2015–2016
PHIL 2061	Science vs. Religion	F 2016, W 2018
PHIL 2078	Ethics for a Digital World	W 2017

### Ryerson University

SSH 105	Critical Thinking	F 2013, W 2014, F 2014
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## Graduate Coursework

### University of Western Ontario

PHIL 9027	The Linguistic Turn in Antiquity
PHIL 9118	Political Theory II: Toleration
PHIL 9222	Content and Consciousness
PHIL 9283	Metaphysics of Science
PHIL 9617	Mental Representation
PHIL 9924	Reading Course: Medieval Philosophy
PHIL 9927	Reading Course: Free Will

### Ryerson University

PH 8109	Virtue Ethics
PH 8115	Plato's Theory of Forms
PH 8001	Reading Course: Confirmation, Underdetermination, Bayesianism
PH 8002	Reading Course: Epistemic Justification

## University of Houston

- PHIL 6304 History of 17th Century Philosophy
- PHIL 6395 The Hume/Quine Revolution in Epistemology
- PHIL 6395 Philosophy of Special Sciences
- PHIL 6396 Leibniz and Spinoza: Moral and Political Theories
- PHIL 6396 Plato and Aristotle: Desire and Virtue
- PHIL 6397 Logic III: Mathematical Logic