

Only Powers Can Confer Dispositions

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According to *power theorists*, all (fundamental, perfectly natural) properties (or at least all fundamental, perfectly natural properties that confer dispositions) are *powers*—i.e. they *necessarily* confer on their bearers certain dispositions. Although dispositional essentialism is increasingly gaining popularity, a vast majority of analytic metaphysicians still favors what I call '*the nomic theory*'—i.e. the view that which dispositions a property confers on its bearers is contingent on what the laws of nature happen to be. This paper argues that the nomic theory is inconsistent, for, if it were correct, then properties would not confer any dispositions on their bearers—they would only appear to do so (just like how in cases of mimicking the objects do not really have the relevant dispositions, they merely appear to have them). If my arguments are sound, then the nomic theory is incoherent and ultimately collapses into what I call 'neo-occasionalism' and dispositional essentialism turns out to be the only available option for those who believe that properties genuinely confer dispositions on their bearers.

I. INTRODUCTION

Most analytic metaphysicians nowadays seem to agree that (at least some) properties confer dispositions on their bearers.¹ However, there is still widespread disagreement as to whether those properties do so *necessarily* or *contingently*. According to *power theorists*, all (fundamental, perfectly natural) properties (or at least all fundamental, perfectly natural properties that confer dispositions) are *powers*—i.e. they *necessarily* confer on their bearers certain dispositions.^{2,3} While the powers theory is becoming increasingly popular,⁴ most analytic metaphysicians still believe that no properties confer dispositions necessarily. More specifically, many subscribe to what, in this paper, I will call '*the nomic theory*'—i.e. the view that which disposition a property confers on its bearers depends on what the (contingent) laws of nature happen to be, so that, had different laws been in effect, the same property might have conferred different dispositions from the ones it actually confers. So, for example, if (as I shall assume here) '*being negatively charged*' denotes a property and if that property actually confers on its bearers a disposition to repel other negatively charged objects, then power theorists believe that negatively charged particles are *necessarily* disposed to repel each other (and *solely* in virtue of their being negatively charged), while the

¹ Just to mention two highly influential examples (and setting aside their numerous philosophical differences), both David Armstrong and David Lewis seem to agree that (natural, fundamental) properties confer dispositions. Lewis, for example, writes: 'Natural properties [are] *the ones relevant to causal powers*.' (Lewis 1984: 346–347; *emphasis added*). In a similar vein, Armstrong claims: 'There is some very close link between universals and causality. The link is of this nature. *If a thing instantiates a certain universal, then, in virtue of that, it has the power to act in a certain way*' (Armstrong 1989: 82; *emphasis added*).

² In this paper, I will ignore the distinction between *the strong version* of the powers theory (according to which *all* properties are powers) and *the weak version* (according to which *some but not all* properties are powers). For the sake of simplicity, I will sometimes speak as if the strong version is true. However, I should note that, since my arguments target the view that *no* properties are powers, they only support the weaker conclusion that *some* properties are powers and not the stronger conclusion that *all* properties are powers. (I would like to thank an anonymous reviewer for this journal for impressing on me the importance of clarifying this point.)

³ For a similar distinction between dispositions and powers, see, e.g., (Bird 2012).

⁴ See, e.g., (Shoemaker 1980), (Swoyer 1982), (Ellis and Lierse 1994), (Ellis 2001), (Heil 2003), (Mumford 2004), (Bird 2007), (Martin 2007), (Jacobs 2010).

nomic theorists believe that they are disposed to do so only *contingently* (and *not only* in virtue of their being negatively charged *but also* in virtue of the fact that the actual laws of nature happen to be such that negatively charged particles repel each other).⁵

In this paper, I argue that, for all its initial attractiveness, the nomic theory is inconsistent. My overall argument goes as follows:

- (1) If the nomic theory is true, then properties confer dispositions on their bearers.
- (2) If properties confer dispositions on their bearers, then either they confer *intrinsic* dispositions on them or they confer *extrinsic* dispositions on them.
- (3) If the nomic theory is true, then properties do *not* confer *intrinsic* dispositions on their bearers.
- (4) If the nomic theory is true, then properties do *not* confer *extrinsic* dispositions on their bearers.

∴ The nomic theory is not true.

In §II, I briefly motivate (1)–(3). In §III, I introduce the notion of mimicking and make a *prima facie* case for (4), by arguing that, if the nomic theory were correct, then all cases in which a property appears to confer a disposition on its bearers would be, in fact, cases of mimicking—i.e. cases in which the objects in question merely appear to have the relevant dispositions even if, in fact, they do not have any such dispositions. In §IV, I present a more principled argument for the same conclusion. I argue that the nomic theorists do not have the resources to distinguish between extrinsic dispositions and cases of mimicking. In §V, I examine some possible strategies to defuse my argument.

If my arguments are sound, then the nomic theory is inconsistent and ultimately collapses into a view, which, owing to its resemblance with classic occasionalism, we might dub ‘*neo-occasionalism*’. According to neo-occasionalism, properties do not genuinely confer dispositions on their bearers—they merely appear to do so (just like how in cases of mimicking the objects do not really have the relevant dispositions, they merely appear to have them). While some may be happy to embrace neo-occasionalism, the powers theory seems to be the only option currently available to those who think that at least some properties confer dispositions on their bearers (as a vast majority of metaphysicians, including those I classify as nomic theorists, seems to do).

II. FIRST HORN: NO INTRINSIC DISPOSITIONS

In this section, I will first clarify my use of the phrase ‘*o* is disposed to/has a disposition to *M* (when *S*)’ and then briefly motivate premises (1)–(3) of my argument. In what follow, I assume what we might call ‘*minimal realism (about dispositions)*’. While analytic philosophers may disagree as to how to best analyze disposition ascriptions or what makes some of them true, they seem to agree that some disposition ascriptions are true and others are false. If Pill is a cyanide pill, for example, few would deny that ‘Pill is disposed to kill when ingested’ is true (and even fewer would be willing to act on their professed anti-realism and ingest it). According to minimal

⁵ I take it that, despite their different views on properties and laws, both Armstrong and Lewis should be classified as nomic theorists. However, since Lewis’s views on properties, laws, and dispositions are much more complex and open to interpretation than Armstrong’s, Armstrong’s views are going to be the main target of my argument. Since I assume that the reader is familiar with Armstrong’s Nomic Necessitation account of laws of nature and, for reasons of space, I shall limit myself to a brief and extremely simplistic sketch of it. On the Nomic Necessitation account, a law of nature is a contingent second-order relation between first-order properties, the nomic necessitation relation; the nomic necessitation relation is such that, whenever it holds between two properties, a particular cannot have the first property without also having the second property (see (Dretske 1976), (Tooley 1976), and (Armstrong 1983), (Armstrong 1997), for three classic formulations of this view).

realism, to say that an object o is disposed to M (when S) or that it has a disposition to M (when S) is simply to say that the disposition ascription ‘ o is disposed to M (when S)’ is true. So, according to minimal realism, to deny that there are dispositions is to deny that there are any true disposition ascriptions and to accept that some disposition ascriptions are true is to accept that there are dispositions. As far as I can see (and as I take the cyanide pill test to show), minimal realism is widely accepted among analytic philosophers of different persuasions (including philosophers who are also happy to embrace more robust forms of realism about dispositions). In particular, it is accepted by most of those whom I take to be nomic theorists (as minimalism about dispositions is compatible with, for example, denying that properties are powers).⁶

Further, I assume that to say that a property, P , confers a disposition, D , amounts to saying that: (i) anything that has P has D , (ii) if something that has P were to lose P , it would lose D , and (iii) if something that does not have P were to acquire P , it would also acquire D .

Let me now turn to the arguments for (1)–(3). The argument for (1) is so simple that it hardly needs elaboration. The nomic theory maintains that properties confer dispositions on their bearers contingently, but, if properties confer dispositions on their bearers contingently, then, *a fortiori*, they confer dispositions on their bearers *simpliciter*. So, if the nomic theory is true, then properties confer dispositions on their bearers. QED.

The argument for (2) is nearly as straightforward. According to the standard definitions of intrinsic and extrinsic dispositions, a disposition is *intrinsic* if and only if it supervenes on the intrinsic properties of the object that has it and it is *extrinsic* otherwise.⁷ More informally, an intrinsic disposition is one that an object *cannot* acquire or lose without undergoing some intrinsic change—i.e. without acquiring or losing some intrinsic property.⁸ (2) quickly follows from these definitions, for, according to these definitions, a disposition cannot fail to be intrinsic without being extrinsic and *vice versa*. Therefore, if a property confers some disposition on its bearers, then, by definition, that disposition must either be intrinsic or extrinsic, for ‘intrinsic’ and ‘extrinsic’ label mutually exclusive and jointly exhaustive categories.

If the arguments for (1) and (2) are relatively straightforward, the argument for (3) is slightly more controversial. If, as nomic theorists maintain, which dispositions a property confers on its bearers depends on what the laws of nature happen to be, then something could lose a disposition without undergoing any intrinsic change (and, in particular, without losing the property that conferred that disposition on it)—all it would take would be for the laws of nature to be different from what they actually are. So, for example, negatively charged particles would not need to undergo any intrinsic change for them to lose their disposition to repel each other. It would be sufficient for it to no longer be a law of nature that negatively charged particles are disposed to repel each other. So, if the nomic theory is true, properties do not confer *intrinsic* dispositions.

While nomic theorists might harbor misgivings about (3), let me set their worries aside until §V (when we will be in a better position to assess them) and focus instead on my arguments for (4). In the next section (§III), I set the stage by making a *prima facie* case for thinking that, if the

⁶ Both Lewis and Armstrong, for example, clearly accept the truth of some disposition ascriptions (see, e.g., (Lewis 1997) and (Armstrong, Martin, and Place 1996)).

⁷ Please note that this is not meant to be a definition or analysis of ‘intrinsic’. If it were one, it would be patently circular, as the notion to be defined/analysed would occur in the definiens/analysans. Rather, it is a definition of ‘intrinsic disposition’, which relies on a prior understanding of the notion of ‘intrinsic property’. Although, as I mention in §V below, the correct definition/analysis of ‘intrinsic property’ is a matter of intense philosophical debate, settling that debate is beyond the scope of this paper.

⁸ For the sake of simplicity, here I shall often talk informally of objects acquiring or losing properties or dispositions, of laws of nature changing, etc. This informal talk should be interpreted modally and not temporally. So, for example, ‘If there was a change in the laws, o would lose its disposition to M (when S)’ does *not* mean that o is disposed to M (when S) at t , but, if a different set of laws were to come into effect at $t^* > t$, then, at t^* o would no longer be disposed to M (when S). Rather, it means that, actually, o has D , but, if a different set of laws had been in effect, o would not have been disposed to M (when S).

nomic theory were correct, then all cases in which properties appear to confer dispositions on their bearers would be, in fact, cases of mimicking—i.e. cases in which the objects have no such dispositions and, then, in the following section (§IV), I present my argument for (4).

III. INTERLUDE: LAWS AND SPELLS

In this section, I offer a *prima facie* argument for the conclusion that, if the nomic theory were true, then properties would not confer dispositions on their bearers after all. In order to do so, I need to first briefly introduce the notion of mimicking. In the literature on disposition ascriptions, cases of mimicking are almost universally considered to be clear counterexamples to the Simple Counterfactual Analysis. According to the Simple Counterfactual Analysis, the disposition ascription ‘*o* is disposed to *M* (when *S*)’ is true if and only if the counterfactual conditional ‘If it were the case that *S*, *o* would *M*’ is also true. Cases of mimicking are counterexamples to the right-to-left side of that biconditional—they are cases in which a disposition ascription is false even if, due to some external interference, its associated counterfactual happens to be true. In the counterexamples, the object does not have a certain disposition but it would mimic the behavior of an object that has it if the right sorts of circumstances were to obtain.

The following fantasy scenario describes a typical case of mimicking:

MIMIC. This very hard diamond is not intrinsically disposed to turn into dust when looked at. However, a powerful wizard has cast a spell that makes it so that, if anyone were to look at the diamond, the diamond would turn into dust.

In MIMIC, the wizard’s spell makes the diamond behave as if it had a disposition that it does not in fact have—although the diamond is not genuinely disposed to turn into dust when looked at, the spell causes it to behave as if it were disposed to do so, for, if someone were to look at the diamond, the diamond would turn into dust. So, contrary to what the Simple Counterfactual Analysis claims, the disposition ascription is false, even if the associated counterfactual is true. For our purposes, it is crucial to note that cases of mimicking are prototypical cases in which the objects do not have the dispositions they seem to have.

What do cases of mimicking have to do with the nomic theory? In the remainder of this section, I argue that, if the nomic theory were true, then all cases in which a property appears to confer a disposition on its bearers would be, in fact, cases of mimicking—i.e. cases in which, due to an external interference, something behaves as if it had a disposition that it does not in fact have. So, just as we would deny that the object has the relevant disposition in a case of mimicking, we should also deny that the object has the relevant disposition on the nomic view.

Suppose that, as the nomic theorist claims, *being negatively charged* is not a power. If it confers on its bearers a disposition to repel other negatively charged particles at all, its doing so is not essential to it—it does so only if the laws of nature happen to be such that negatively charged particles repel other negatively charged particles. If it were a law of nature that, say, negatively charged particles attracted other negatively charged particles or that they annihilated positively charged particles within a one-foot radius of them instead, then the property of *being negatively charged* would confer on its bearers different dispositions from the ones it actually happens to confer.

Now consider the following scenario:

SPELLBOUND. Negatively charged particles are not intrinsically disposed to annihilate positively charged particles. However, a powerful wizard has cast a spell that makes this negatively charged electron annihilate any positively charged particle within a one-foot radius of it, so that, if a positively charged particle were to be within an inch of the electron, the positively charged particle would be annihilated.

SPELLBOUND seems to describe a prototypical case of mimicking just like MIMIC. In both cases, the wizard's spell creates the illusion that something has a disposition it does not in fact have. In both cases, the disposition ascriptions are false, while the associated counterfactuals are true. In both cases, the objects do not genuinely have the relevant dispositions—they only mimic the behaviour of objects that have those dispositions.

Consider next the following variation on SPELLBOUND:

SPELLBOUND*. Negatively charged particles are not intrinsically disposed to annihilate positively charged particles. However, a powerful wizard has cast a spell that makes all negatively charged particles annihilate all positively charged particles within a one-foot radius of them, so that, if a positively charged particle were to find itself within a one-foot radius of a negatively charged particle, the positively charged particle would be annihilated.

If SPELLBOUND describes a case of mimicking, then so, it would seem, does SPELLBOUND*. Neither the electron in SPELLBOUND nor the negatively charged particles in SPELLBOUND* are disposed to annihilate positively charged particles in their vicinity. However, it is only due to the wizard's spells that the electron in SPELLBOUND and the particles in SPELLBOUND* behave as if they are so disposed. Once again, in both cases, the disposition ascriptions are false, while the associated counterfactuals are true. The objects do not genuinely have the relevant disposition—they only mimic the behavior of objects that have it.

So far so good for the nomic theorist, but now consider the following scenario:

LAWBOUND. Negatively charged particles are not intrinsically disposed to annihilate positively charged particles. However, God has established that it is a law of nature that all negatively charged particles annihilate any positively charged particles within a one-foot radius of them, so that, if a positively charged particle were to find itself within a one-foot radius of a negatively charged particle, the positively charged particle would be annihilated.

On the face of it, it would seem that, if SPELLBOUND* describes a case of mimicking, then so does LAWBOUND. But, if that's the case, then the negatively charged particles in LAWBOUND are not genuinely disposed to annihilate positively charged particles either—they only appear to be so disposed (due to God's having established the relevant law of nature). Just like in other cases of mimicking, the disposition ascription seems to be false despite the associated counterfactual's being true. Once again, the objects do not genuinely have the relevant disposition—they only mimic the behaviour of objects that have those dispositions.

Unless nomic theorists can draw a principled distinction between God's law in LAWBOUND and the wizard's spell in SPELLBOUND*, we would have to conclude that, in both cases, negatively charged particles are not genuinely disposed to annihilate positively charged particles in their vicinity—they only act as if they were so disposed—and, therefore, that the laws of nature do not confer dispositions on negatively charged particles in LAWBOUND any more than the wizard's spell does in SPELLBOUND, or SPELLBOUND*. Obviously, this would be a disastrous consequence for nomic theorists, as it would mean that, not only do properties not confer dispositions contingently, but they do not confer dispositions *at all*, which means that the nomic theory is false and something akin to neo-occasionalism is true.

The challenge for the nomic theorist is thus to give us good reasons to believe that the case described in LAWBOUND is not a case of mimicking even if the case described in SPELLBOUND* seems to be clearly one and the analogy between the two cases seems to be very strong. Why would God's law be different from the wizard's spell? Why would one confer genuine dispositions while the other only appears to do so? As far as I can see, the answer is that there is no relevant difference between the two scenarios—they both describe cases of mimicking. In both scenarios, an *external* influence makes some particles behave the way they do even if those particles are not *intrinsically* disposed to behave that way.

In particular, it should be noted that, since, in the case of the wizard's spell, the fact that this electron would not behave the way it does if it were not negatively charged is no reason to think that its being negatively charged confers on it a disposition to annihilate positively charged particles, there seems to be no reason to think so in the case of God's law either. In both cases, something extrinsic to those particles (and, more specifically, extrinsic to their instantiating the property *being negatively charged*) seems to be doing all the work—in one case, it is the spell cast by the wizard; in the other case, the law established by God.⁹

At this point, nomic theorists might protest that the analogy between SPELLBOUND* and LAWBOUND relies too heavily on the theistic imagery employed in the latter. Nomic theorists might claim that a godless version of LAWBOUND would not elicit the same reaction elicited by LAWBOUND. However, I do not see how removing God from the LAWBOUND scenario improves the situation for nomic theorists.

Consider the godless version of LAWBOUND:

LAWBOUND*. Negatively charged particles are not intrinsically disposed to annihilate positively charged particles. However, it just so happens to be the case that it is a law of nature that all negatively charged particles annihilate any positively charged particles within a one-foot radius of them, so that, if a positively charged particle were to be within a one-foot radius of a negatively charged particle, it would be annihilated.

Although the analogy between LAWBOUND* and SPELLBOUND* is admittedly weaker than the one between LAWBOUND and SPELLBOUND*, this does not seem to make the one described in LAWBOUND* any less clearly a case of mimicking than the one described in LAWBOUND. Regardless of whether the laws are established by God or by chance,¹⁰ the problem is that they are extrinsic to the objects that fall under their jurisdiction and, more specifically, to the properties of those objects.

I am inclined to classify both LAWBOUND and LAWBOUND* as cases of mimicking. My overall argument, however, does not ultimately rely on one's intuitive reaction to the above cases—it relies on general considerations about the nature of dispositions, which, I will argue in the next section, support the last premise of my main argument (i.e. (4)). However, I hope that the analogy between SPELLBOUND* and LAWBOUND (or LAWBOUND*) goes some way towards shifting the burden of proof onto the nomic theorist. The analogy between SPELLBOUND* and LAWBOUND seems to give us at least a *prima facie* reason for thinking that, on the nomic theory, cases in which a property appears to confer dispositions on its bearers are, in fact, cases of mimicking. Of course, the analogy provides us only with a defeasible reason for thinking so, but, when confronted with the striking analogy between the two cases, it would seem up to the nomic theorists to convince us that, on their view, properties are in fact able to confer genuine dispositions on their bearers. In the next section, I argue that nomic theorists do not have the resources to do so.

IV. SECOND HORN: NO EXTRINSIC DISPOSITIONS

I am now in a better position to offer an argument for (4). Consider again *Lawbound**. Since, as we have already established in §II (setting aside the worries to be addressed in §V), the property *being negatively charged* in *Lawbound** does not confer on its bearers an *intrinsic* disposition to annihilate positively charged objects, if that property confers a disposition to annihilate positively charged objects *at all*, it must confer an *extrinsic* disposition to do so. In order to be able to argue

⁹ Nomic theorists might claim that the analogy between SPELLBOUND* and LAWBOUND would break down if the latter scenario were described in greater detail. I shall address this worry in §V below.

¹⁰ I am saying 'by chance' here because, if laws are, in fact, contingent and neither God nor any "god-like" entity determines what the actual laws are, then it seems to be purely a matter of chance that the laws happen to be what they actually are.

that that property confers an extrinsic disposition on its bearers (as opposed to no disposition at all), however, nomic theorists must provide us with a principled way to distinguish extrinsic dispositions from mere cases of mimicking. Otherwise, they would have no independent grounds for claiming that the negatively charged objects in *LAWBOUND** are extrinsically disposed to annihilate positively charged objects instead of merely appearing to be so disposed; they would have to concede that there is no relevant difference between the cases described in *SPELLBOUND** and *LAWBOUND**. So, what differentiates extrinsic dispositions from mere cases of mimicking?

At first, it might be tempting to think that what distinguishes the ones from the others is that, unlike cases of mimicking, dispositions (whether intrinsic or extrinsic) rely on the properties of the objects that have them. More specifically, it might seem that, in order for an object to have a certain extrinsic disposition, some (intrinsic) property of the object must be part of the causal basis for that disposition (i.e. the causally operative sufficient condition that would bring about the manifestation of that disposition, if the stimulus condition were to obtain)¹¹.

What we might call '*the property-based account*' may seem promising at first, as it correctly classifies the diamond in *MIMIC* as not being extrinsically disposed to turn into dust when looked at (for none of the intrinsic properties of the diamond is part of the causally operative sufficient condition for its turning into dust if looked at). Much to the relief of nomic theorists, the property-based account would also seem to classify negatively charged particles in *LAWBOUND** as being extrinsically disposed to annihilate all positively charged particles within a one-foot radius of them, as the fact that the particles are negatively charged would have to be part of the causally operative sufficient condition for their annihilating those particles (had the negatively charged particles not been negatively charged, they wouldn't have fallen under the jurisdiction of the law that all negatively charged particles annihilate positively charged particles within a one-foot radius of them).

Unfortunately for the nomic theorist, however, the property-based account seems to deliver the wrong verdict on *SPELLBOUND**, for what I said about negatively charged particles in *LAWBOUND** applies *mutatis mutandis* to negatively charged particles in *SPELLBOUND** as well—none of them would have annihilated the positively charged particles within a one-foot radius had they not been negatively charged. Had those particles not been negatively charged, they would not have fallen under the wizard's spell. So, the property-based account incorrectly classifies the negatively charged particles in *SPELLBOUND** as being genuinely disposed to annihilate positively charged particles when, in fact, they seem to have no such disposition.

But, if intrinsic properties cannot help us distinguish extrinsic dispositions from mere cases of mimicking, what can help us do so? Elsewhere (Contessa 2013) I have argued that what distinguishes extrinsic dispositions from mere cases of mimicking is (on a first approximation) the fact that extrinsic dispositions rely on some intrinsic dispositions of the object that have them, while, in cases of mimicking, no intrinsic disposition underlies the object's (actual or possible) behaviour. Although I cannot rehearse my arguments for this proposal here, I will briefly illustrate how it correctly classifies a number of prototypical cases. Consider, for example, the following scenario:

UNLOCKED. There are two keys: Key and Key*. Key is so shaped that, were it to be inserted in the lock installed on a certain door and turned, it would cause the pins inside that lock to rise in such a way that the lock would unlock and the door would be free to open. If Key* were inserted in the same lock, on the other hand, its shape would not cause the pins of the lock to rise so as to unlock the lock. However, it just so happens that if Key* were to be inserted in that lock, a Lock Fairy would magically cause the pins in the lock to rise so that the lock would unlock and the door would be free to open.

¹¹ See (Prior, Pargetter and Jackson 1982: 251) and (Contessa 2012).

Neither Key nor Key* are *intrinsically* disposed to unlock the door. However, Key seems to be *extrinsically* disposed to unlock the door, while Key* is not—it only mimics the behavior of a key disposed to unlock the door.¹² But what underlies the difference between the two keys? If my diagnosis is correct, it is the fact that, in the case of Key, an *intrinsic* disposition underlies its *extrinsic* disposition to open the door—i.e. its intrinsic disposition to unlock locks such as the one that happens to be installed on that door. No intrinsic disposition of Key*, on the other hand, underlies its behavior. In other words, although neither Key nor Key* are intrinsically disposed to open that specific door, Key is intrinsically disposed to open the lock that happens to be installed on that door (and other locks like it). If Key were to lose that intrinsic disposition (e.g. by becoming bent), it would also lose its extrinsic disposition to open that door. No intrinsic disposition of Key*, on the other hand, would underpin its alleged disposition to open the door in question and its opening that door is thus merely a case of mimicking.

Although what we might call ‘the disposition-based account’ needs further refinement in order to be entirely satisfactory,¹³ it seems to deliver the right verdict in all uncontroversial cases. In particular, it correctly classifies the scenarios described in MIMIC, SPELLBOUND and SPELLBOUND* as cases of mimicking (for no intrinsic disposition of the diamond in MIMIC underlies its supposed disposition to turn into dust when looked at, and no intrinsic dispositions of the electron in SPELLBOUND or of the negatively charged particles in SPELLBOUND* underlie their supposed dispositions to annihilate nearby positively charged particles). Unfortunately for the nomic theorist, however, the disposition-based account also classifies the scenarios described by LAWBOUND and LAWBOUND* as cases of mimicking (for no intrinsic disposition of the negatively charged particles in either scenario underpins their alleged disposition to annihilate positively charged particles near them). Therefore, the disposition-based account seems to support the conclusion that, on the nomic theory, properties cannot confer extrinsic dispositions either.

Once again, we seem to have to conclude that, if the nomic theory were true, then properties would not confer dispositions on their bearers, which means that the nomic view is inconsistent (as, if it were true, properties would have to both confer and not confer dispositions on their bearers). Of course, the failure of the property-based account and the seeming success of the disposition-based account do not provide us with conclusive reasons to think that it is impossible to draw a principled distinction between extrinsic dispositions and mimics that does not rely on intrinsic dispositions. Admittedly, I have offered no general argument to exclude there being other successful proposals that do not rely on intrinsic dispositions and I do not have one. However, after having considered two plausible candidates for the job—i.e. intrinsic properties and intrinsic dispositions, it would seem to be up to the nomic theorist to show that one of the candidates that I have overlooked can perform the job at least as well as intrinsic dispositions do.

V. THROUGH THE HORNS?

My overall argument crucially relies on the definition of ‘intrinsic disposition’ as a disposition that supervenes on the intrinsic properties of the object that has it. Nomic theorists, however, are likely to complain that this definition stacks the deck against them. If ‘intrinsic disposition’

¹² Of course, Key’s disposition is extrinsic because Key could lose it without undergoing any intrinsic change (see (Shoemaker 1980) and (McKittrick 2003)). If the lock currently on the door were to be substituted with a different lock, for example, Key would lose its disposition to open the door.

¹³ In particular, to avoid counterexamples analogous to SPELLBOUND*, our account should require that the extrinsic disposition is not manifested unless the underlying intrinsic disposition is also manifested. Furthermore, to avoid ascribing bogus extrinsic dispositions to objects, our account should also require that the stimulus condition of the extrinsic disposition does not coincide with the manifestation of the underlying intrinsic disposition. See (Contessa 2013) for a detailed formulation of the account.

were defined as a disposition an object cannot acquire or lose without undergoing any intrinsic change *while keeping the laws of nature fixed* instead,¹⁴ the nomic theorist might argue, my argument would never get off the ground, as we would no longer have any rationale for assuming (3). But is this strategy effective?

A first problem with the alternative definition is that, although everyone is free to define new technical terms as they please, ‘intrinsic’ is *not* a new technical term—it has an established use in analytic metaphysics and an extensive literature exists on how to *correctly* analyze the notion of intrinsicity.¹⁵ This seems to suggest that not all candidate definitions of ‘intrinsic’ are equally good. But why would the definition of ‘intrinsic disposition’ I have adopted (call it ‘*the lawless definition*’) be better than the one that nomic theorists are likely to favor (call it ‘*the lawful definition*’)? I think the lawless definition is preferable to the lawful definition because it is more consistent with the ordinary use of ‘intrinsic’ in analytic metaphysics. Although there is no uncontroversial definition of ‘intrinsic’, as Stephen Yablo once put it, [we all] know what an intrinsic property is: it’s a property that a thing has (or lacks) regardless of what may be going on outside of itself (Yablo 1999: 479). Although different nomic theorists might disagree as to what exactly laws of nature are, they seem to agree that they are something that (to use Yablo’s phrase) “goes on outside of” the objects that fall under their jurisdiction; the laws are *extrinsic* to those objects and, most crucially, they are extrinsic to the properties of those objects.¹⁶ For instance, it would seem that, if the laws were to change, the objects that fall within their jurisdiction would not, thereby, undergo any *intrinsic* change.¹⁷ So, why should we take the laws into account when trying to determine what an object is *intrinsically* disposed to do?

Nomic theorists might argue that the rationale for keeping the laws fixed when trying to determine what an object is disposed to do is that we are only interested in what the object is disposed to do *given the actual laws of nature*, as it is ultimately the laws of nature that determine what an object with certain properties is (or is not) disposed to do. If the laws of nature were completely different, objects would have completely different dispositions from the ones they actually have (and, presumably, if there were no laws of nature at all, objects would have no dispositions whatsoever). But, if this were the case, then it would be unclear in what sense the dispositions objects would acquire or lose when different laws of nature come into effect could be called ‘intrinsic’. Of course, we could all agree to label them ‘intrinsic’ but that would not seem to make them any more intrinsic to the objects that have them than if we had used a different label. To paraphrase Lewis, a disposition cannot become intrinsic just by bearing a name, any more than one can have mighty biceps just by being called ‘Armstrong’.

In any case, even if we were to adopt the lawless definition of ‘intrinsic dispositions’, the situation would not improve significantly for nomic theorists. To start with, let me introduce the

¹⁴ A definition adopted by, among others, David Lewis (1997) and Jennifer McKittrick (2003).

¹⁵ See, e.g., (Valentyne 1997) and (Langton and Lewis 1998).

¹⁶ To see in what sense contingent laws are extrinsic in the relevant sense, consider, for example, Armstrong’s view according to which laws are contingent second-order relations between first-order universals. *P*’s being contingently related to *Q* by nomic necessitation would seem to be extrinsic to *P*, for *P* would not have to undergo any intrinsic change for it not to be related to *Q*; all it would take would be for the relation of nomic necessitation to fail to hold between the two properties. While I suspect that the same is true of all possible version of the view that laws of nature are extrinsic, I am unable to provide a general argument for thinking that contingent laws are necessarily extrinsic (in the relevant sense) here. However, since this seems to be clearly the case for the two most popular accounts of contingent laws (i.e. Armstrong’s and Lewis’s), if the nomic theorist wants to avoid my argument, she will have to come up with an account of laws of nature according to which laws are both contingent and intrinsic (in the relevant sense).

¹⁷ Which of course does not mean that, had the laws of nature been different, all properties we take to be intrinsic would be the same. For example, had the laws been different, the shapes of mid-sized material objects might have been different (needless to say, as a power theorist I take this to be a counterpossible), but this would be a reason to think that (contrary to what is often assumed) shapes are not intrinsic properties and not a reason to think that a change in the laws could bring about a change in the intrinsic properties of objects. (See (Skow 2007) for a similar argument for the view that the shape of an object is not an intrinsic property of that object).

labels ‘*completely intrinsic dispositions*’ for those dispositions which so far I have labeled ‘intrinsic dispositions’ and the label ‘*partly intrinsic dispositions*’ for those (alleged) dispositions that are intrinsic without being completely intrinsic.¹⁸ The idea is presumably that dispositions that the properties allegedly confer on their bearers given the actual laws of nature (call these alleged dispositions ‘the nomic dispositions’) can be intrinsic without being completely intrinsic and that, therefore, (3) is false. What distinguishes partly intrinsic dispositions from both extrinsic dispositions and cases of mimicking, the nomic theory could argue, is that partly intrinsic dispositions cannot be acquired or lost unless there is a change in either (a) the intrinsic properties of the object or (b) the laws of nature that are in effect. Nomic theorists might argue that, while the negatively charged particles in *LAWBOUND** have a partly intrinsic disposition to annihilate positively charged particles in their vicinity, negatively charged particles in *SPELLBOUND** do not have any such disposition.

This proposal, however, seems to miss the point. What my argument calls into question is not whether the (alleged) disposition to annihilate any positively charged particles in their vicinity is an intrinsic disposition of the negatively charged particles in *LAWBOUND**, but whether those particles have any such disposition in the first place. And this question cannot be answered by simply creating a new *ad hoc* category of dispositions. To see why, suppose that some philosophers (call them ‘*magic theorists*’) claim that the negatively charged particles in *SPELLBOUND** also have a genuine disposition to annihilate positively charged particles in their vicinity. When presented with a suitably reformulated version of my argument, magic theorists respond by claiming that our argument relies on a tendentious definition of ‘intrinsic disposition’. The magic theorists would then claim that “magic dispositions”, although not completely intrinsic, are partly intrinsic and propose to amend the nomic theorist’s definition of ‘intrinsic dispositions’ so as to include not only the alleged “nomic dispositions” that the nomic theorist wants us to recognize but also these alleged “magic dispositions”. On their definition, an intrinsic disposition is a disposition an object cannot acquire or lose unless there is a change in (a) the intrinsic properties of the object, (b) the laws of nature that are in effect, or (c) the magical spells that are in effect. In other words, when determining whether a disposition is intrinsic you have to keep fixed not only all of the extant laws of nature but also all of the extant magical spells. I assume that this line of argument would not mislead many people into denying that the situations described in *SPELLBOUND**, *SPELLBOUND*, or *MIMIC* are cases of mimicking. In particular, I trust that virtually no nomic theorist would concede that the magic theorist’s alleged “magic dispositions” are, in fact, dispositions. But, if that’s the case, then how can nomic theorists hope to persuade the rest of us into believing that the objects in *LAWBOUND* and *LAWBOUND** genuinely have the dispositions they appear to have?

At this point, nomic theorists might protest: ‘But, surely, even you must agree that there are differences between laws and spells!’ However, I am afraid I do not agree. I believe neither in spells nor in laws (at least, I do not believe there are any laws of the sort nomic theorists envisage), but the problem, as far as I can see, is exactly that spells are virtually indistinguishable from laws (as the nomic theorist conceives of them). Or, more precisely, I cannot think of any *relevant* differences between spells and laws (as the nomic theorist conceives of them) (i.e. differences that would *matter* when it comes to drawing a distinction between genuine dispositions and cases of mimicking). Consider, for example, one possible difference between the two—i.e. that laws are eternal while spells are not. But why can’t spells be eternal? Presumably, spells can’t be eternal because the universe already needs to exist before someone can cast a spell. But is this enough to differentiate spells from laws for our purposes? What would be the difference between God establishing a law in *LAWBOUND* and God casting a spell to the same effect? As far as I can see, the difference is that we would never describe God’s actions as the casting of a spell. Wizard and witches cast spells, God doesn’t. At most, God

¹⁸ Similar terminology is used in (Lewis 1983b).

establishes certain laws of nature (or breaks them by making miracles). However, if God were to cast an eternal spell (i.e. a spell whose effect spans throughout the history of the universe), how would that situation be relevantly different from God's establishing a law of nature (as construed by nomic theorists)? Moreover, why would the fact that spells are not eternal matter? If "magic theorists" cannot include spells in their definition of 'intrinsic dispositions' because spells are not eternal, why couldn't we disallow the nomic theorist's contingent laws on the grounds that they are not necessary? As far as I can see, the nomic theorist does not have any good, principled answers to such questions.

Before concluding, I would like to address one last worry. The worry is that throughout this paper I have talked about the nomic theory as if it provided us with a single, unified metaphysical picture, when, in fact, the philosophers I classify as 'nomic theorists' disagree with one another on all sorts of metaphysical issues. Most importantly, they disagree on the specific accounts of properties and laws they adopt. In particular, one might feel that, had I focused on a specific view of properties and laws, the appearance of an analogy between SPELLBOUND* and LAWBOUND would have disappeared. I think this worry is misplaced. Suppose, for example, that our nomic theorist is someone who holds that (roughly) for a law of nature to obtain is for two first-order universals to be contingently related by a second-order relational universal (call it 'nomic necessitation') and that whenever two universals are related by nomic necessitation, anything that instantiates the first universal also instantiates the second. On this view, God would establish the laws of nature by seeing to it that the nomic necessitation relation holds between certain first-order universals and not others. This, our nomic theorist might argue, is a very different matter from casting a spell. This complaint, however, seems to rely on the fact that no one has ever developed a metaphysical account of spells (and for very good reasons, of course). But suppose that a magic theorist came up with the view that spells (or at least general spells of the sort featured in SPELLBOUND*) also establish a second-order relation between first-order universals (call it 'magic necessitation'), which is similar to the nomic necessitation relation except that it can hold temporarily between two properties. If this were the case, the analogy between the two cases would be reestablished. In general, it seems that, with enough ingenuity, for any account of laws the nomic theorist might adopt, a magic theorist might come up with a matching account of (general) spells.

While I have not exhausted all the possible strategies available to the nomic theorist to try to defuse my argument, I hope the above suffices to show that nomic theorists cannot do so easily as it might at first appear and, in particular, that they cannot do so by redefining the notion of intrinsic disposition.

VI. CONCLUSION

In this paper, I have argued that, if the nomic theory were true, then properties would not genuinely confer dispositions on their bearers—they would merely appear to do so. If my arguments are sound, the nomic theory is inconsistent and it ultimately collapses into what I have dubbed 'neo-occasionalism'—i.e. the view that objects are not genuinely disposed to act as they do but merely appear to be so disposed. While some may be happy to embrace neo-occasionalism, dispositional essentialism seems to be the only option currently available to those who think that properties do in fact confer dispositions on their bearers and are unwilling to reject minimal realism about dispositions.

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