Universals, laws, and governance

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Abstract: Proponents of the dispositional theory of properties typically claim that their view is not one that offers a realist, governing conception of laws. My first aim is to show that, contrary to this claim, if one commits to dispositionalism then one does not automatically give up on a robust, realist theory of laws. This is because dispositionalism can readily be developed within a Platonic framework of universals. Second, I argue that there are good reasons for realist dispositionalists to favour a Platonic view. This is because the alternative Aristotelian version of dispositionalism, on which universals are immanent entities, is unstable for various reasons. My final aim is to address a common criticism facing Platonic theories of laws, which is the problem of how external entities can play an explanatory role where the world's law-like patterns of behaviour are concerned. I argue that the Platonists' response to the one over many problem can help to shed light on this matter, and a possible solution is sketched, one which makes use of the notions of essence, constitution and ontological dependence.

Keywords: laws; dispositions; universals; Platonism; Aristotelianism; explanation.

1. Introduction

Anti-Humeans are those who reject the Humean regularity theory of laws. According to the regularity theory, laws do not govern or explain the patterns of behavioural regularity we find in nature, because laws just *are* certain kinds of regularity.[1] Anti-Humean theories, in contrast, try to provide metaphysical explanations for the behavioural regularities in nature. The nomological realism of Dretske (1977), Tooley (1977) and Armstrong (1983), on which laws are relations of natural

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[1] See e.g. Lewis 1973, pp. 72-6 and Beebee 2000 for examples of modern regularity theories. Note that Humean regularities can play explanatory roles insofar as fundamental regularities (i.e. the laws) can entail non-fundamental regularities. The main point in the comment above is just that laws cannot explain the fundamental regularities given that they are identical with them.

necessitation between categorical universals, is one influential approach, but the dispositional theory of universals is arguably the most popular anti-Humean strategy at present. The dispositional view comes in more than one variety, but the most discussed version says that at least some universals are 'pure powers', which is to say there is nothing more to them than the dispositions they confer (see e.g. Shoemaker 1980; Ellis 2001; McKitrick 2003; Mumford 2004; Bird 2007a; Tugby 2013). I will use the term 'dispositionalism' to refer to this pure powers view, which will be explained further below.[2] Note also that following the authors just listed, I will assume a realist framework of universals for the purposes of this paper.[3]

Now, how much does dispositionalism differ from other anti-Humean approaches, such as the Dretske-Tooley-Armstrong (DTA) view of laws? Most dispositionalists take the difference to be substantial. Proponents of the DTA view fall into the category of those who favour a thoroughly realist, *governing* conceptions of laws. This is because they appeal to relations of natural necessitation between categorical properties (universals) which are external and contingent, and which are supposed to explain the behavioural regularities in the world. In contrast, it is typically denied that dispositionalism offers a realist, governing conception of laws even though it does attempt to provide an explanation for behavioural regularities. On the dispositional view, the explanation is provided by the essential natures of the fundamental properties. Natural properties are said to have dispositional essences, which means that, as a matter of metaphysical necessity, possessors of those properties

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[2] The main alternatives to the 'pure' version of the dispositional theory are the two-sided and identity views. The two sided view says that all natural properties have an inert qualitative (or 'categorical') side as well as a dispositional side, whereas the identity view says that the qualitative and dispositional 'aspects' of properties are one and the same. Interested readers should see Martin (2008) and Heil (2003).

[3] Unfortunately, I do not have the space in this paper to discuss trope versions of dispositionalism. Incidentally, I think that the trope version of the dispositional theory is unworkable and I direct interested readers to my 2013, Section 2. For those who think that trope dispositionalism is a feasible alternative, the main conclusion of this paper may be considered a conditional thesis: that if dispositional properties are universals, then dispositionalism is best developed within a Platonic framework of laws.

cannot fail to play the causal roles that they play. However, because these dispositional features flow entirely from the internal natures of the properties (more on this in section 3), proponents of this view typically claim that it is inappropriate to consider it as providing a governing conception of laws. Mumford, for example, argues that because the explanatory work is done by properties themselves, there are no laws external to things which govern their behaviour (2004, Part 3). Ellis, another leading dispositionalist, also claims that he should not be classified as a realist about laws. Although he is happy to retain talk of laws, he thinks that laws are just descriptive propositions of a certain sort, and 'are not items that should occur in anyone's ontology' (Ellis, 2006, p. 439). To use a more recent example, Hildebrand (2014) calls the dispositional view 'descriptive anti-Humeanism', explaining that '[T]his approach does not invoke governing laws; it merely holds that some fundamental properties are bare dispositions' (Hildebrand 2014, p. 570).

Contrary to this trend, my first aim in this paper (Sect. 2 and Sect. 3) is to argue that it is a mistake to assume that, once dispositionalism is accepted, one must automatically abandon a realist, governing conception of laws. This is because dispositionalism can readily be understood within a Platonic theory of properties, on which clear sense can be made of the idea that there are external laws. To be fair, Ellis and Mumford reject the Platonic theory of universals in favour of an Aristotelian conception, on which universals are immanent in space and time (more on this later). However, my second aim in this paper (section 4) is to show that there are good reasons for developing dispositionalism as a Platonic as opposed to an Aristotelian view. My aim in the final part of the paper (section 5) is to indicate how a Platonic version of dispositionalism ought to set about responding to a common criticism facing Platonism. The criticism is that it is unclear how Platonic entities can help to explain the law-like patterns of behavioural regularity in the concrete world. In response, I will argue that one of the keys to addressing this criticism lies in the Platonists' answer to the one over many problem (to be explained in section 5). By the end of the paper, then, I hope to have demonstrated that a Platonic theory of laws is a view worthy of serious consideration, especially for those attracted to the now-popular dispositionalist view.

Before beginning the main arguments of the paper, I should add that this paper is not the first to suggest that dispositionalism is best understood as a Platonic view. Dumsday (2012) and myself (2013) have recently advocated Platonic versions of dispositionalism, although it is worth noting that in my 2013 paper I did not consider whether the view is best thought of as a realist or anti-realist theory about laws. Dumsday reached his Platonic conclusions using considerations about ceteris paribus laws (i.e. laws that have exceptions), while in my 2013 paper I argued that a Platonic framework can help dispositionalists to accommodate certain core features of dispositions.[4] Nonetheless, I believe this paper will make its own important contributions to the debate between Aristotelian and Platonist anti-Humeans. The arguments to be presented here are broader than, and differ from, those found in Dumsday 2012 and my 2013. Moreover, Dumsday's (2012) arguments are to some extent controversial. His Platonic argument rests on the assumption that ceteris paribus laws are pervasive. However, some philosophers of science, such as Bird, have argued that it is unlikely that there are any ceteris paribus laws (as opposed to strict laws) at the fundamental level, on the basis that it is improbable that there are interfering 'finks' or 'antidotes' at such a level (Bird 2007a, pp. 60-5). My intention is not to enter this debate here, but suffice it to say it would be comforting for the Platonists to know there are arguments at their disposal which are not hostage to the status of ceteris paribus laws and other specific scientific debates.[5] Finally, I should also note that neither Dumsday (2012) nor I (2013) addressed the important question of how, precisely, the Platonic realm can help to explain the patterns of law-like behavioural regularity in the world. I will address this in section 5, and indeed many may find this later section to be the most rewarding one.

2. Dispositionalism and the alleged elimination of governing laws

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[4] See also Bird 2007a, pp. 53-4, who tentatively leans towards Platonism. However, unlike Dumsday (2012) and myself (2013), Bird is reluctant to commit whole-heartedly to Platonism, claiming that 'such a view is not mandatory on my account' 2007a, p. 205).

[5] To be fair to Dumsday, he does acknowledge that the argument from ceteris paribus laws may not be the only route to nomic Platonism (2012, p. 146). My main aim in this paper is to vindicate that remark.

Mumford does not see the dispositional view as providing a governing conception of laws because he sees it as eliminating laws altogether. What, then, explains the regularities in nature if not laws? The answer, according to Mumford's view, is that it is 'properties, and properties alone, that do the job' (2004, p. 161). If we want to cling to the governing metaphor, Mumford is happy to say that dispositional properties are self-governing (2004, p. 197). But he maintains that there are no external entities which help to explain why things behave as they do, and so he thinks talk of laws is inappropriate. This is where I disagree, however. Once understood in the right way, there is a clear sense in which dispositionalism provides metaphysical facts which are external to concrete states of affairs and which can play the role of laws. The metaphysical facts in question are the second-order relations holding between disposition universals, relations which Mumford (2004, Ch. 10), Ellis (2001, Ch. 3) and Bird (2007a Ch. 6) all appeal to. And as we shall see in section 4, there are good reasons for viewing these relational states of affairs as being external to concrete propertied things, because there are good reasons for supposing the universals involved are transcendent Platonic entities.

As an initial way of motivating the argument just outlined, it is important to note, first, that Mumford and Ellis's dispositional view of properties (see also Bird 2007a, Ch. 6) is structurally very similar to the DTA view of laws, although this is not always openly acknowledged. At the heart of the DTA view is the claim that laws are second-order relations between universals, and that these relations help to explain why propertied things behave as they do. But this is precisely what dispositionalists also typically hold. Mumford, for instance, says that dispositional universals are 'modal' properties insofar as they necessarily bear modal *relations* to each other (2004, pp. 177-8). Hence, when summarising his view in one place, Mumford says that '[M]y account of the essences of properties will be in terms of the causal or power role: what I speak of more generally as the relations a property bears to other properties (2006, pp. 177-8). And importantly, it is these second-order relational essences—the causal roles—of properties that ultimately explain why propertied things behave as they do.

Now, Mumford does try to distance his view from the DTA theory by pointing out that, unlike the DTA theory's nomic relations, which are external and contingent, dispositional relations are *internal* and necessary: '[A]n internal relation is something that exists when its relata exist. The internal relation is not, therefore, some extra element that has to be added to the relata, such as laws are supposed to be on the naïve realist account of laws or on the more sophisticated DTA theory' (2004, p. 197). In the same section, Mumford also emphasises that properties 'connect with or affect each other without the governance of an external and outside entity … the possibilities they make, are made from within' (2004, p. 197). But it is not immediately obvious to me why any of this should prevent us from thinking of the relations between universals as laws that in some sense govern. They may be internal relations, but they are relations nonetheless, and as we saw above they are supposed to help explain why propertied things behave in the way they do. What, then, is Mumford driving at in resisting talk of governing laws? I can glean two possible worries from the quotes above, but I do not think either stands up to scrutiny, as we shall now see.

3. Why dispositionalism can offer a realist conception of laws

3.1. Answering the internality worry

The first interpretation of Mumford's worry above is that because the relations between properties are internal, perhaps they are in some sense less real or substantial than the external relations that DTA theorists appeal to. This kind of idea is sometimes captured by saying that internal relations are 'ontological free lunches' (Armstrong 1997, p. 12), which is to say they are not additions of being. Perhaps Mumford's thought, then, is that realists about laws ought to be reluctant to identify laws with internal relations, because they are not metaphysically substantial enough to carry out their own work. This interpretation is supported by a passage in which Mumford responds to Bird's suggestion that laws could still be real even if they supervene on the properties they relate:

> I cannot, of course, deny that if X is real, and Y supervenes on X, then Y is real. What I have tried to
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> argue is that such a Y could not count as a metaphysically substantial law of nature … If the powers or

potencies are doing all the work in this metaphysics, then such laws are still very much impoverished (Mumford 2006, p. 464).

The problem with this argument is that there are different kinds of internal relation, and not all of them are insubstantial, or 'ontological free lunches'. For instance, Barker distinguishes between what he calls 'L'-internal relations (named after Leibniz) and 'B'-internal relations (named after Bradley). A relation is L-internal if its 'instantiation by relata holds in virtue of monadic features of these relata' (2009, p.247). These relations clearly *are* ontological free lunches, because once the relata with all their monadic features exist, the relation is automatically there. In contrast, a 'B'-internal relation is defined as being such that the 'relata linked by R are, partly or wholly, constituted by their entering into the relation R' (2009, p. 247). Importantly, this is precisely one of the roles that the dispositionalists' second-order relations are supposed to play, because, as Bird puts it, on this view 'all there is to (the identity of) a property is a matter of second-order relations to other properties' (2007b, p. 527). The dispositionalists' second-order relations are therefore B-internal, given that they are what constitute universals. But crucially, as Barker points out, 'B-internality implies the opposite status to a free lunch' (2009, p. 247; see also my 2012, p. 179). Such relations must be metaphysically substantial if the things they constitute are to be metaphysically substantial, which the dispositionalists' universals surely are. Moreover, since the relations between properties determine the sorts of dispositions that those properties are, these relations are clearly doing important metaphysical work.

3.2. Answering the lack of externality worry

Even if the above response is granted, as it should be, perhaps Mumford's worry is that the second-order relations have no existence independently of the worldly course of events. The governing metaphor that tends to go along with full-blooded realism about laws suggests that laws should stand apart from the worldly course of events, determining how they pan out 'from above'. One might, of course, suspect that this requirement on laws is too strong, but let us grant it for the sake of argument.

So, does dispositionalism really imply a rejection of laws *qua* external entities? It does not, and so the current interpretation of Mumford's argument is unsuccessful. To see why, let us assume a Platonic framework on which universals exist independently of the concrete world, which is to say they are transcendent entities. Now, recall that the relations which constitute the essences of dispositional universals *relate the universals themselves* rather than concrete particulars (i.e. they are second-order relations). Hence, if these properties are transcendent entities, surely it follows that the second-order relations between them must be transcendent too. And so, if a Platonic framework is accepted, the relations between universals are in a very clear sense external to the concrete world. Of course, the Platonist has further questions to answer regarding how a realm that stands apart from concrete reality can play an explanatory role with respect to it, but we shall return to that issue in section 5.

Now, Mumford (and other dispositionalists such as Ellis) does make it clear that he favours an immanent Aristotelian conception of universals, perhaps because he anticipates the sort of response above. On the Aristotelian view, universals are immanent in space and time: they are ontologically dependent upon, and exist entirely through, their concrete instantiations. However, my response at this point is simply as follows. By insisting on an immanent Aristotelian conception of universals, dispositionalists are left with an unstable position, as we shall now see. This suggests the dispositional view is best understood as a Platonic view about laws.

4. On why Aristotelian dispositionalism is internally unstable

4.1 Immanent universals and explanation

The first problem facing the Aristotelian version of dispositionalism is that it is susceptible to the very objection that Mumford raises for Armstrong's view of laws (Mumford 2004, p. 103). The problem is that given Armstrong's commitment to immanent universals, it is unclear how universals and the relations between them can deliver the explanations they promise. On Armstrong's view, the relations between universals, which are themselves universals, are supposed to help explain why propertied things behave as they do. Yet, because universals are immanent, those universals ontologically depend upon the very sequences of worldly events that they are supposed to explain. This creates a

structural problem, because it is far from clear how things could explain or determine the very things on which they ontologically depend. Ordinarily, this is not how explanatory relations work. For instance, effects depend on their causes (but not vice versa), and for that reason causes explain their effects (rather than vice versa).

I agree that this is a problem for the Armstrongian position.[6] My point here is just that it is hard to see how Aristotelian dispositionalism can avoid the same sort of problem. Presumably, Mumford must think he avoids this objection because he does not see himself as being in the business of positing laws which determine and thereby explain worldly sequences of behaviour. However, to think in this way is misleading. Like Armstrong, the dispositionalists are thoroughly anti-Humean, and so *are* in the business of explaining the world's law-like patterns of behaviour. Indeed, Mumford is open about this:

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[6] I should mention that after noticing that Mumford (2004, p. 155) sometimes puts the explanatory problem in terms of supervenience, Alexander Bird questions the principle that something cannot determine that upon which it supervenes. Bird writes: 'Let us imagine that F determines or governs G but does not supervene on G. Now consider the mereological sum of F and G. Clearly F supervenes on that sum but determines part of it' (2007a, p. 196). This is a fair point, but I think all it shows is that Mumford should have framed the problem in terms of ontological dependence rather than supervenience. After all, Armstrong's immanent realism is more accurately described as the view that universals *ontologically depend* on their instantiations. However, ontological dependence is not the same thing as supervenience. In Bird's example, surely the sum of F and G is ontologically dependent on F rather than vice versa given that F determines G. And so, this is not a case in which something (in this case F) determines or explains something on which it is ontologically dependent. For it to be such a case, it would have to be that F is ontologically dependent on the sum of F and G rather than vice versa. In short, then, Bird's case is not a counterexample to the claim that something cannot determine that upon which it is ontologically dependent. I therefore think Bird would have been better off using Platonism as a way of responding to Mumford's worry, as we will below. Incidentally, such an argument was available to Bird because he is open to a Platonic conception of universals (2007a, Ch. 3). But unfortunately, he does not make use of this in his discussion of the question about the reality of laws (2007a, Ch. 9).

I do not deny that there is order and regularity that permits reliable inference. The explanation I offer for such phenomena is internal and immanent, as opposed to external and transcendent. Reliable inferences are based on other sources, for example kinds, properties and their connections (2004, p. 198).

In short, both dispositionalism and Armstrong's nomological view try to explain the behavioural characteristics of propertied things in terms of second-order 'connections' between universals. But for this reason, Mumford's version of dispositionalism faces the same explanatory problem as Armstrong's theory. On the Aristotelian view, the second-order facts which fix the causal roles of properties must be embedded within the worldly course of events on which they ontologically depend. But for this reason, it is far from clear how Aristotelian dispositionalism can avoid the sort of explanatory worry facing Armstrong's nomological realism.

The obvious way for dispositionalists to avoid this problem is simply to deny that dispositional properties and their second-order relations ontologically depend upon the concrete world. And that is to accept Platonism. There is also a broader lesson to be drawn here,[7] which is that those wedded to categoricalist nomological realism (i.e., the DTA theory) should also adopt a Platonic view of universals.[8] Indeed, as we shall see at the end of section 5, I would go as far as to say that any full-blooded governing laws view has to adopt Platonism. However, since the main purpose of this paper is to explore how, and in what sense, a Platonic version of dispositionalism can yield a governing conception of laws, I will not say more here about the in-house dispute between nomic Platonists who take properties to be dispositional and those who take them to be categorical. Readers who are interested in the reasons why dispositionalists take their view to be superior to categoricalism should consult Bird (2007a, Ch. 4), Ellis (2001, Ch. 6) and Mumford (2004, Ch. 6).

4.2 Alien properties

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[7] I am grateful to an anonymous referee for urging this point.

[8] To be fair to Tooley (1977), he is more open to the Platonic view than nomological realists like Armstrong.

Let us now consider another reason why dispositionalists should find Platonism attractive. The reason is based on the fact that there is a natural stance for dispositionalists to take on the issue of alien properties. Alien properties are properties that are not actually instantiated in our world. Famously, Armstrong denied that instantiations of alien properties are possible. As an Aristotelian about universals, and as someone seeking to provide a 'this-worldly' account of possibility, Armstrong felt forced in his early work (1989) to limit possibilities to recombinations of the actual elements of the world. Hence, Armstrong's theory could not admit that alien instantiations are possible (1989, p. 21). Such a conclusion is difficult for dispositionalists to swallow, however, for on their view surely there can be dispositions for manifestations which never actually occur. And given such dispositions, surely the associated 'alien' manifestations must be possible. For illustration, consider a world containing a single object, a dry oak tree, which never happens to go up in flames. Surely all thoroughgoing realists about dispositional properties should be happy to accept that the tree is flammable even if the manifestation of being on fire is never instantiated in that world. But if we are to accept that the tree is flammable, surely we cannot consistently maintain that it is in no way possible for the tree to be in the state of being on fire.

Indeed, Mumford is well aware of this and concedes that 'we may have a disposition whose manifestation is never actualized at any point in the world's history' (2004, p. 181). So, while he agrees with Armstrong that a property must be instantiated in order to exist, he is not prepared to say that a property that is not instantiated is not a possible property of something. However, the problem is that as an Aristotelian, this leaves Mumford (and others such as Ellis) with some very difficult questions. What does it mean to say that certain properties do not exist but are merely possible? That is, what are we quantifying over when we speak of merely possible alien properties? If alien properties do not really exist, then in what sense can dispositions be directed towards them? All of this is deeply puzzling, and indeed it is this sort of concern that motivates the 'Meinongian' objections widely discussed by Armstrong (1997, p. 79), myself (2013) and others.[9] As that objection has been discussed in detail elsewhere, I will not pursue it further here. My point is just that if Aristotelian

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[9] See also my 2015, where the puzzling nature of alien possibilities is explored further.

realism is adopted, it is far from clear that dispositionalists can successfully carry through their allowance of possible alien properties. All the more reason, then, for them to accept Platonism, on which the ontological status of alien properties is clear and straightforward. On the Platonic picture, we can simply say that alien properties exist, but that they are alien in the sense that they are uninstantiated. Once again, then, Platonism is able to stabilise the dispositionalist position.

5. How can Platonic entities help to explain law-like patterns of regularity?

Hopefully, enough has been said to show that there are good reasons for locating dispositionalism within a Platonic framework. However, there is still work to be done. I argued in section 3 that if the dispositionalists' second-order relations are Platonic, then they lay a good claim to being real laws: they are both metaphysically substantial and can stand independently of the worldly course of events. But so far I have not said much about the precise way in which Platonic entities could help to explain the law-like, behavioural regularities in the concrete world. What sort of explanatory role can Platonic entities play? Note that if the Platonic version of dispositionalism really is consistent with a governing conception of laws, it had better be the case that Platonic entities can play some sort of explanatory role where worldly behaviour is concerned. That this is so is made particularly clear by Mumford himself. As we saw earlier, Mumford maintains that if there are real laws, they must play a governing role. And as Bird observes (2007a, p. 191), the main form of argument that Mumford attributes to realists about laws, which he calls the Nomological Argument, is precisely an explanatory one. The Nomological Argument contains two steps (Mumford 2004, p. 69):

1) There is a set S of features in the world (such as behavioural regularity and predictability)
2) There is S because there are laws of nature.

Now, the use of the word 'because' clearly indicates an explanatory relation. Hence, if this is the argument that is typically used for the governing view, then clearly the notion of governance is

closely bound up with the notion of explanation.[10] We will return to the issue of governance again later, when we will suggest a further reason for thinking Platonic dispositionalism provides a governance view *par excellence*. But for now, let us restrict ourselves to the question of how Platonic entities can play an explanatory role where the world's patterns of behavioural regularity are concerned.

The problem is that the explanatory role of Platonic entities has often not been made sufficiently clear by Platonists. Plato scholars cannot even agree on whether the relations between concrete things and the Forms (i.e. universals) are supposed to be causal or metaphysical. This sort of mystery is also voiced by Armstrong in a discussion of direct nomic connections between universals:

> This direct connection may suggest Platonism. Universals, whether instantiated or uninstantiated, stand above the flux and certain relations between the universals 'govern' their instances, lay down the law to their instances. Perhaps this was Plato's picture of law-governed behaviour in the *Phaedo*. It is in any case a profoundly mysterious doctrine and is certainly not what is being advocated here' (1997, p. 226).

In response, I would now like to indicate the sort of direction that a Platonist answer to this question ought to take. My hope is that this will provide a metaphysical framework for future work on this important issue.

In what sense, then, can Platonic entities help to explain the law-like patterns of behaviour in the concrete world? Let me begin by stating what Platonic dispositionalists should *not* say. They should not say that the Platonic entities 'stand above the flux', as Armstrong puts it, and at the same time exert a direct causal influence upon the particulars in the world, animating things that are otherwise inert. I agree with Armstrong that this would be a difficult picture to comprehend, but in any case this is surely the wrong picture if dispositionalism is accepted. Above all else, the main point of dispositionalism is that the worldly particulars are not inert. Rather, the worldly particulars have

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[10] Mumford cites discussions in Carroll (1994) and Chalmers (1995) as two examples of the explanationist argument for governing laws.

irreducible causal powers in virtue of the properties that they exemplify. Note that just because, on the dispositional picture, dispositional properties are relationally constituted at the second-order level, this does not entail that concrete particulars cannot instantiate those properties intrinsically. As Bird puts it: 'The pure potencies view is not committed to all first-order properties being relational' (2007a, p. 141). To think otherwise is to confuse second-order claims with first-order claims. Of course, the Platonist still owes an account of what property instantiation amounts to (more on which in a moment). But the key point for initial purposes is that once dispositionalism is accepted, it is the instantiated powers of things that directly 'push and pull' them around.

Now, does this observation imply that the Platonic realm does not also have an important explanatory role to play? I do not think so, *because at the heart of the Platonic dispositionalist view is the idea that property instances play their causal roles in virtue of the Platonic universals they are instances of*. This is why different instances of the same property must bestow the same causal powers, which in turn grounds the law-like truth that like causes like. To use a slogan, we might say that while the disposition instances do the causal work, it is the Platonic facts that set the rules by which they operate. Thus, the Platonic explanation proceeds in two steps. Firstly, the laws, understood as relations between universals, determine (i.e., *govern*) the causal/dispositional roles that properties play as a matter of metaphysical necessity. Secondly, these laws then make an impact upon the world due to the fact that those universals are repeatedly *instantiated* by concrete things. As things stand, however, this is perhaps only a partial explanation, for we have not yet explained what it means for a property to be repeatedly instantiated. It is to that task that we now turn.

The question of what instantiation involves is the central concern of realists seeking to address the one over many problem, which asks how it is that the same property can be predicated of different particulars or, in Armstrong's words, how distinct particulars can 'all be of the same "type"' (Armstrong, 1978, p. 41). Plato himself was arguably the first to articulate this problem (see e.g. *Parmenides* 132 in Plato 1934 and *Republic* 596 in Plato 1941), and of course he thought the answer lies in the theory of Forms: distinct things share the same property when they each bear a certain relation (call it instantiation) to the same Form.

Now, those familiar with these debates will know that the one over many problem is usually treated separately from the problem of how to explain law-like patterns of behaviour. However, if one accepts dispositionalism, then I believe the two problems become intimately connected. If property instantiations are instantiations of causal dispositions, then of course it is not surprising that things with the same properties behave in the same way. But crucially, this does not yet explain how and in what sense different things can instantiate the same properties. If things did not instantiate the same properties, then no discernible patterns of behavioural regularity would arise, *because no two things would share the same causal powers*. So, for the dispositionalist, the repeatable, law-like patterns of behaviour that we find in the world depend at least in part on the repeatability of dispositional properties. And to explain this repeatability is precisely to answer the one over many problem.

Let me put the above point in a slightly different way: a defining feature of a law-like regularity is that it is fully general in character. In its simplest form a law-like regularity says that if anything is F, then it will be a G, where the universal quantifier involved is unrestricted. But if this is to represent anything other than a trivial regularity, it must be that more than one particular thing can be F. The dispositional view by itself does not automatically explain how more than one thing can have the same causal power. Yet, until this is explained, we have not yet fully accounted for why the world contains law-like regularities, which is to say repeatable patterns of behaviour.

With this in mind, I will now specify the direction that a contemporary Platonic account of property instantiation ought to take. Firstly, note that if we reject the idea that the dispositions of things *causally* depend on the Platonic realm, the relation between disposition instantiations and their universals must be a relation of metaphysical dependence of some kind. Earlier we spoke of how, on the immanent view of universals, universals are ontologically dependent on their concrete instantiations. A natural way of rendering Platonism, then, is to view it as the converse of the immanent view, which is to say that property instantiations (i.e. concrete powers) are ontologically dependent on their corresponding universals rather than vice versa. Importantly, note that such a view should strike dispositionalists as immediately preferable to Aristotelian realism, because it seems better able to accommodate the idea that disposition instantiations inherit their directedness from the

universals they are instantiations of. Surely it would be odd to think of one entity inheriting features from another where the latter is ontologically dependent on the former. This, again, is another reason for thinking Platonic dispositionalism is structurally preferable to Aristotelian dispositionalism.

What is meant by ontological dependence? Minimally, to say that one thing (call it x) ontologically depends upon another (y) is to say, at least in part, that necessarily, if x exists then y exists. However, in the case of Platonic realism, a purely modal construal of the dependence involved is arguably inadequate for technical reasons. The problem is that Platonic universals, being outside of space and time, are plausibly necessary existents (see e.g. Bird 2007a, p. 64). But as critics of the purely modal account of ontological dependence point out (see e.g. Correia 2005, p. 47), where the thing depended upon is a necessary existent, anything whatsoever can be plugged into the antecedent of the modal dependence conditional to leave us with a true sentence. But surely that leaves us with *too many* dependences. What this suggests, then, is that we need a dependence relation that is appropriately constrained by the *nature* of the entities involved.

Given this observation, it seems a notion of essence (or something like it) is needed in our account of the relation between a property instance and the relevant universal. In particular, I believe a Platonist can usefully appeal to something along the lines of the Finean notion of essential dependence, or some other cognate notion. At the heart of Fine's motivation for introducing the notion of essential dependence is precisely the idea that in many (if not all) cases of ontological dependence, 'the necessity of the conditional 'x exists only if y does' should be appropriately tied to the nature of the dependent entity item x' (Fine, 1995, pp. 272-273). In other words, to say that the existence of x essentially depends on the existence of y is to say that it is 'an essential property of x that it exist only if y does' (1995, p. 272), or that 'y is a constituent of an essential property of x' (1995, p. 275). Importantly, we will see that with relations of essential dependence in play, a Platonic explanation for one over many phenomena is in the offing, as long as these dependence relations can be many-one, which is to say that many property instances can essentially depend on the same universal.

What is particularly important to note is that relations of essential dependence are much better suited than purely modal notions of dependence to perform explanatory work. Indeed, some argue that because the notion of ontological dependence is conceptually tied to the notion of explanation, a purely modal account of ontological dependence is wrong-headed from the start (see, for example, Schneider 2006). Consider, for instance, the following much discussed example: Assuming the empty set exists necessarily (as seems plausible) and that Kit Fine is a contingent existent, then the latter is modally dependent on the former. And yet, it is surely not the case that the existence of the former is in some way explanatory of the existence of the latter. In contrast, relations of essential dependence are much better suited to providing explanations. To use a much-discussed example from Fine (1995, p. 271), the existence of Socrates' singleton set can be explained by the existence of Socrates rather than vice versa, and this asymmetry is plausibly rooted in the fact that the singleton is essentially dependent on Socrates rather than vice versa.

So far, so good. However, at this point, one might question the analogy between Fine's set case, and the case of a disposition instantiation depending on a universal. Given that set membership and property exemplification are different sorts of metaphysical phenomena, one might wonder whether the dependences and explanations involved are the same.[11]

In order to address this worry, let us firstly make it clear that Fine's set case is only one of many possible cases of essential dependence, and other cases involve metaphysical phenomena that bear more resemblance the case of property instantiation. Consider, for instance, the claims of natural kind essentialists such as Lowe (2006) and Ellis (2001). According to their view, kinds are instantiated essentially. If this is correct, then part of what it is to be, say, an individual electron is to instantiate the kind 'electron'. Furthermore, according to the views advanced by Lowe and Ellis, kinds are universals (namely, substantial universals). In short, then, on this view an individual electron essentially depends on the universal 'electron' that it instantiates. And of course, because the natural kind essentialist case involves the notions of universals and instantiation, it provides a closer parallel to the Platonist view I am proposing. The difference is just that while natural kind essentialists think

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[11] I am grateful to an anonymous referee for pressing this point.

certain individuals essentially depend on substantial universals, the Platonist can say that a property instance, such as the redness of a particular rose, essentially depends upon a property universal, such as redness. Moreover, both of these views can then offer explanations for certain patterns of repeatability, or 'one over many'. The natural kind essentialists will say that more than one individual can be an electron because natural kind dependences are many-one, while the Platonists can say that more than one individual can instantiate the same dispositional property because property dependences are many-one. Crucially, this latter point then helps the Platonist to account for the repeatability of behaviour in nature, given that repeatable dispositional properties are responsible for that behaviour. I do not wish to pass judgement on the tenability of natural kind essentialism here, but suffice it to say that insofar as one thinks natural kind essentialism is an intelligible thesis, one should not find it difficult to understand the analogous Platonist position about properties.

However, I think we may go a little further, because on at least one understanding of Platonism (the one which I prefer), the existence of sets essentially depends upon, and is explained by, the existence of their members in the same way that property instances depend upon universals. This means that further consideration of the set case may itself help to illuminate Platonism. In one place, for instance, Fine highlights that Socrates is a part of the essence of singleton Socrates in the *constitutive* sense (1995, p. 276). There seems nothing wrong with thinking that the members of a set are in some sense constituents of the set, and so the essential dependence involved seems to amount to the fact that Socrates is an essential constitutent (in some sense) of singleton Socrates. Talk of constitution also helps to clarify the sense in which the existence of Socrates explains the existence of Socrates' singleton. Wesley Salmon (1984) among others have traced out two broad categories of explanation: causal explanation and constitutive explanation. Given what has just been said, it seems the set case naturally falls into the latter category of explanation. All of this then raises the question of whether the notion of essence involved in the case of property instantiation could be the notion of constitutive essence. The answer, as I will now suggest, is plausibly 'yes'.

The version of Platonism I have in mind here is a dispositionalist version of the general Platonic realist view that Moreland among others has articulated (2001, 2013). On this view, property

instances, such as a rose's redness, are not simple entities but rather structurally complex. A property instance is metaphysically complex in the sense that the universal redness is in some sense *in* it. Importantly, Moreland cashes this out in terms of the notion of constitutive essence: 'Let us call this "way of being in" the relation of "being an essential property-constituent of"' (2001, p. 98). But as Moreland then makes clear, 'this is not the spatial sense of *in*' (2001, p. 98). Again, an analogy with the set case can be drawn here, because although Socrates is a constituent of his singleton, he is clearly not a constituent in the spatial sense, given that sets are at least partially abstract.

In short, what emerges from Moreland's version of Platonism is the idea that although universals exist uninstantiated, when they do happen to be instantiated, they are in some sense *in* their instances as essential (non-spatial) constituents. To use a distinction drawn by Armstrong, this version of Platonism may be classed as a 'layer cake' view of concrete objects rather than a relational 'blob' theory. According to the blob theory, objects have no internal metaphysical structure and so no properties are in any sense part of them. Rather, the 'blobs' merely inherit their properties by standing in external relations to entities outside of them (i.e. universals). Clearly, Moreland's version of Platonism does not fall into this category. Although universals have independent existence, they can still be constituents of property instances. This is clearly not incoherent because of course many things can be constituents of an entity even though they have independent existence. For instance, although a piece of wood can be the constituent of a chair, it has independent existence in the sense that the piece of wood could exist without being the constituent of any chair.[12] Although I do not have

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[12] This is one way in which the set case differs from the property case. For, while a Platonic universal can exist without being instantiated, it is less plausible to think that Socrates can exist without his singleton also existing. Another point of difference, which a referee has rightly pointed out, is that although we want to say (on the current proposal) that Platonic universals in some sense govern the behaviour of the things that instantiate them, it seems wrong to say that Socrates in any sense governs singleton Socrates. As should be clear by now, I would not say that this is because the dependence involved is any different. Rather, I believe this difference reflects the fact that we reserve governance terminology for cases in which the thing being explained exhibits causal powers

the space to defend this version of Platonism in detail here, I believe it is preferable to the relational 'blob' theory which, for example, finds it hard to explain in a transparent way how the redness *of* a rose can arise from some external relation to an external entity. Moreover, I suspect that most objections facing Platonism are based precisely upon a relational interpretation of the view. Indeed, we saw earlier how Armstrong found it hard to see how Platonic laws can play a role in the world's behaviour if they 'stand above the flux' (1997, p. 226). I strongly suspect Armstrong is assuming a relational view of Platonism here, on which dispositional properties cannot in any sense be inherently instantiated in the world. The point I want to make here is just that this is not a view that Platonists need accept. Of course, there may be further questions for this version of Platonism to face, such as how it is that a Platonic universal can inhere in something concrete. I partially answered this question earlier when I said that, as with the set case, the notion of constituency in play here is non-spatial. But clearly there is more to be said about this issue, and I direct the reader to Moreland's (2001, 2013) work on it.

During this lengthy section, I have clarified the senses in which Platonic disposition universals might figure in a metaphysical explanation for the repeatable, law-like patterns of behaviour in the world. As we saw earlier, the notion of governance is closely bound up with the notion of explanation, and so if Platonic entities can be said to govern, they had better play an explanatory role. The explanation proposed started with the fact that the second-order relations in which universals stand (i.e., the laws) determine the dispositional roles of those universals. Then, we proceeded by considering how those universals are brought down to Earth. This involved addressing the nature of instantiation and the one over many problem, which in turn helped to explain the repeatable patterns of behaviour in nature (given that those patterns are grounded in the repeatability of dispositional properties). The account explored is one that first and foremost appeals to the notions of essential dependence and constitutive explanation, which are relatively well understood due to recent work in metaphysics. Putting all of this together, we might summarise Platonic governance as follows: the

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and patterns. This means that talk of governance is inappropriate in respect of singleton sets given that they, being abstract entities, do not engage in causal behaviour.

nomic relations between universals set the rules about what the universals can do, and they make their impact upon the world via the instantiations of those universals by concrete particulars. Since disposition universals can by their very nature be repeatably instantiated, it is no longer surprising that there are so many repeatable patterns of behaviour in the world.

Before closing, however, it will be useful to briefly provide further support for the idea that Platonic dispositionalism is a governance view *par excellence,* by considering another feature that the governing conception is sometimes thought to involve. Some have said that the governing view goes naturally with the idea that the laws would be as they are even if the concrete world had turned out very differently (due, say, to a very different set of initial conditions). Clearly, if one rejects the governance view, one will reject the idea that laws have to be as they are. For if laws merely supervene on the worldly patterns of behaviour, then the laws may be different if those patterns are different. Using Swartz's words (1995), this opposing supervenience view rejects the idea that laws hold *subjunctively*. On the other hand, it can be seen that Platonism accommodates the subjunctive strength of laws very well. Indeed, if one is a Platonist, one will think that the laws are subjunctively robust in the strongest possible terms, because even if a law were to have no instances *at all*, it would still be the case that the law holds, given that the universals involved exist uninstantiated. What this suggests, then, is that Platonism is what committed governance theorists should have in mind all along.

6. Conclusions

In this paper I have attempted three things. First, I have argued that if one commits to dispositionalism, one does not automatically give up on a robust, realist theory of laws. The reason for this is that dispositionalism can readily be developed within a Platonic framework. Second, I suggested there are good reasons for dispositionalists (and also DTA theorists) to positively favour the Platonic version of their view. Finally, a common criticism facing realist conceptions of laws has been discussed, which is the problem of how external laws can play an explanatory role where the world's law-like patterns of behaviour are concerned. I argued that the Platonists' solution to the one over

many problem can help to shed light on this matter, and a solution was proposed, one which made use of the notions of essential dependence and constitutive explanation. Since much work has taken place in recent years on the notions of essence and ontological dependence, Platonists can I think be hopeful of advancing our understanding of what have traditionally seemed like murky metaphysical issues.

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