Eliminating Potentiality from Pure Powers

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Abstract

I work to eliminate potentiality from the essences of pure powers, dispositions, by developing and defending a Megarian Actualist framework. I argue that the manifestations of fundamental natural powers are totally actual fields and that this enables me to avoid the Meinongian problem which affects traditional dispositionalist accounts. I adopt and defend Molnar's view of manifestations and contributions and later I defend against criticisms against Megarian Actualism by Aristotle, Molnar and Bird. Finally, I conclude by demonstrating that Megarian Actualism can still preserve modality at large, despite endorsing a strict necessity relation between manifestation and disposition.

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1) Introduction

The question I raise is whether potentiality is really necessary for an account of what pure powers are. I believe that it is not, and that there are serious advantages to rejecting this dominant view and developing an alternate position where potentiality is eliminated from the nature of pure powers, essentially dispositional properties, in favour of an account where fundamental natural powers are totally actual fields.

This is something of a contradiction, it is widely held that powers are essentially potential, in that they bear some relation to a manifestation which might not occur. However, my position does have a name, Megarian Actualism. It is a dead and lost position, famously lambasted by Aristotle and has since mostly existed as a footnote as to why potential powers should not be questioned (Aristotle, 9.1047a). The only other person to seriously defend a version of it is Friend's recent *Megarian Variable Actualism* (2021).

My position is not Friend's, nor is it likely the same position Aristotle rejects. My intent is not to reconstruct any historically accurate version of Megarian Actualism. My aim is to exhume and then develop a working version of it, a version with explanatory power and which can act as a useful alternative to contemporary dispositionalist accounts. I could call this Neo-Megarian Actualism or some other name, however as there is no real Megarian Actualist theory, I see the title as vacant.

Usually dispositionalist debates, unsurprisingly, focus on dispositions themselves rather than the manifestations which fix their identity. Megarian Actualism is a view about manifestation, as such I work to even the scales slightly and largely keep my focus on the nature of manifestations and their modal connection with their dispositions.

Chapter one is an overview of pertinent background, I locate Megarian Actualism within contemporary dispositionalism and clarify the notion of potentiality I am trying to eliminate from the essence of powers. I present some motivations for the position, the most obvious being that it provides a novel and simple solution to the important Meinongian objection to Dispositionalism. I conclude with an analysis of Friend's position, pointing out where we differ and examining the problems with Megarian Actualism which Friend identifies and I will later need to address.

Chapter two is largely dedicated to extracting the most useful elements of the most developed dispositionalist account of property interaction, the vector model by Mumford and Anjum

(2011). I discuss issues surrounding property interaction and the identity of powers, before adopting the controversial view that manifestations are not complex effects, but rather contributions. I reject Mumford and Anjum's view of contribution, instead clarifying and defending Molnar's position and taking manifestations to be simple events which act as individual causal factors in causal interactions.

In chapter three I develop the broad framework for the Megarian Actualist account, arguing that the manifestations for charge and mass are not force exertions between other property instances as they are usually taken to be, but rather fields. I then work to identify the most relevant features of fields, before putting fields to work and demonstrating how a Megarian field view of manifestations can do the necessary work required for a dispositionalist account.

Lastly, in chapter four I demonstrate how Megarian Actualism solves the Meinongian problem through totally actually manifestations. I work to further explain the modal relations between Megarian dispositions, manifestations and effects and also address three key criticisms from Aristotle, Molnar and Bird as well as other objections.

1.1) Dispositionalism

Dispositions are a type of property and so we should begin with what properties are. Properties can be roughly understood to be what we refer to when we speak of adjectives, the things which make an object the way that it is. What makes a red square a red square, is that it is red and it is square, that it has redness and squareness. It is assumed by most that properties are not merely predications, they are what our descriptions pick out.[1]

Properties are also usually divided into token and types. The red square has a token property of red, it is one instance of red, a tomato has another. Both objects have their own tokens properties but what they share is an instance of a general property type, redness. Tokens are particular properties, also often called instantiations and depending on your ontological commitments, types can also be called universals.

The exact ontological status of properties is a debate I will largely ignore, my focus is on properties as tokens, keeping the ontology flexible. Most nominalists would say properties just pick out classes or similarity relations between objects whereas others place properties

[1] The Ostrich or Quinean nominalist would disagree, for them properties are merely fundamental predications (see Devitt, 1980; Quine, 2011)

within their own ontological category, as actual entities called universals or for the trope theorist, tropes. Principally, I intend to keep all these options open.

Dispositions are properties that characterise objects that manifest a certain result in response to certain stimuli. The traditional example is a vase possessing the property of fragility. Fragility is the disposition for the vase to break when struck. Philosophers are generally quite happy to say that dispositions exist, the inevitable disagreement arises over what precisely the nature or essence of dispositions consists in.

The particular view I am interested in is dispositional essentialism, or just dispositionalism. This is the theory that at least some fundamental natural dispositions are essentially dispositional. By this the dispositionalist means that all there is to the essence of these dispositions is their functional role, the behaviour or result they tend to bring about (Bird 2016, 3; Mumford & Anum 2011, 5; Tugby 2013, 452).[2] Dispositions thus have their identities individuated by what it is they bring about (McKitrick 2003, 157; Molnar 2003, 61). The contrasting position is to assert that properties are categorical. A categorical property is characterised independently of their relation to any external entity and have a character in and of themselves. (Bird 2016, 6; Coates 2021, 8353). There is more to a categorical property than just what it does, which is usually understood to mean that categorical properties are quiddities, their essence is not tied to their causal or functional powers nor do they necessarily exhibit any relations to other properties (Bird 2007, 71).

My preferred understanding of the distinction is that categorical properties are what they are, in virtue of what they are, whereas dispositional properties are what they are in virtue of what they do. In addition, what dispositional properties do is modally fixed, in all possible worlds a disposition has the same essential functional role (Bird 2007, 44). There is a wide range of views between properties being wholly categorical to being wholly dispositional, dispositional essentialism being the view that at least some properties are totally dispositional.

McKitrick points out four traditional markers of dispositions which are relevant to my argument (2003, 156-158). One, dispositions are activated under particular circumstances, certain stimulus conditions. The hitting of the vase is the stimulus which causes the vase to

[2] Dispositionalists generally follow Fine in that they take modality to be grounded in essence (See Fine 1994). What something is, consists in what it does and therefore modal claims about a thing are grounded in that function.

express its disposition of fragility. Two, dispositions are associated with certain results known as ‘manifestations’. Manifestation are what occurs when the stimulus activates a disposition. In the example of the vase, the manifestation of the vase’s fragility is the event of its shattering. Three, dispositions can be referred to through “overtly dispositional locutions” such as ‘X is the disposition to do Y in situation Z’ (McKitrick 2003, 157). So, solubility is the disposition to dissolve in the situation of being dropped in water. Lastly, objects possess their dispositions whether or not their manifestations occur. The vase is fragile whether or not it shatters.

It is this final point which Megarian Actualism explicitly contests, although as I discuss shortly I also choose to reject McKitrick’s second feature. However, dispositions do seem to imply some kind of potentiality. It is natural to say that a vase which is fragile, is a vase which has the potential to shatter. This is generally thought to entail some kind of connection between powers and potential manifestations, which is often thought of as a ‘directedness’ to that potential outcome (Friend 2022, 10522; Molnar 2003, 61). Instead of needing this directedness, the Megarian Actualist argues that dispositions are always accompanied by their manifestations. This leads to the admittedly strange conclusion that my dispositions are not dispositional, although referring to essentially dispositional properties as powers perhaps helps in this regard. The obvious question which should immediately be addressed is what makes Megarian Actualism a dispositionalist account if it lacks this distinctive dispositionalist feature of potentiality.

My position on this is similar to Bird’s, what I take to be the two core claims of dispositionalism is one, that the essences of dispositions are exhausted by their functional role, and two, that this function is modally fixed (2016, 6). The main difference is that where traditional dispositionalists usually take the functional role to be dispositional, what something could do, my position is that the functional role is what a disposition always, actually does. At best my Megarian dispositions are then only trivially modal, and so those unwilling to relax terminology this far are welcome to think of Megarian dispositions as Megarian properties instead. My interest lies in developing a Megarian Actualist position about properties, not shoehorning it into a particular position. However, it is still apparent that even if my dispositions are not dispositions, dispositionalism is its closest cousin and they should be compared and contrasted.

An additional debate within dispositionalism is whether dispositions should be considered single-track or multi-track. Multi-track dispositions are, "dispositions the exercises of which are indefinitely-heterogeneous" (2009, 32). In other words, that there are dispositions which are directed towards multiple manifestations (Vetter 2014, 132). For example, a fragile vase can break in many different, qualitative, ways and perhaps to different, quantitative, degrees. A vase might shatter from being struck by a bat, it might also shatter from being struck by an axe, alternatively the right pitch could also manifest a shattering. A light strike may manifest fragility as a slight crack the vase and a strong hit could smash it into dust. Many dispositions then appear to be both qualitatively and quantitively multi-track. (Friend 2021, 10528; Vetter 2013, 335). Each 'track' or conditional of a multi-track disposition is a directedness towards one of many particular manifestations.

Furthermore, I will be restricting my account to just fundamental natural properties. This distinction is coined by Lewis who argues that properties can be more or less natural depending on how fundamental they are, with the most natural properties being the most fundamental (1983, 346-347). Candidates for these fundamental properties are usually considered to be mass and electric charge and I will mainly work with these (Bird 2007, 7). This is partly because I agree with Bird that pandispositionalism, the view that all properties are essentially dispositional, overreaches (See 2016). Additionally, this restriction helps the Megarian Actualist avoid the common sense objection, that the fragile vase is not always shattering (Friend 2021, 10525). While non-natural properties such as fragility clearly cannot be Megarian, always and essentially manifesting, the case is less clear for natural properties. For example, Friend as well as Esfeld and Sachse suggest that many scientific properties, such as mass and charge, are best understood as spontaneous and constantly active in a Megarian sense (2011, 39-40; 2021, 10539). I do not go so far as to endorse the wider scientific conception of natural properties, sticking to only mass and charge as the most likely candidates for natural properties (Schaffer 2004; 92). The fundamentalist conception of natural properties is also useful in avoiding issues of causal efficacy. Some critique that dispositionalism leads to causal overdeterminism, a fragile vase is caused to shatter both by its disposition to shatter and the molecular structure which underpins its material strength (Prior et al 1982, 255). However, the manifestations of fundamental natural properties plausibly have no causal basis aside from their dispositions. At the bottom level there is no further explanation for a manifestation aside from it just being caused by its property.

Following Bird's terminology, I distinguish between dispositions and "mere dispositions" (Bird 2016, 22). A mere disposition is any property which can be characterised dispositionally regardless of whether it is essentially dispositional, in that its nature consists entirely in its functional role. Any disposition which is not a fundamental natural property, I take to be a mere disposition. This means that fragility, heat, and a variety of other pandispositionalist powers are only considered mere dispositions by the Megarian Actualist. I will frequently make use of mere dispositions as examples, however Megarian Actualism should be understood to only apply to fundamental, natural and essentially dispositional properties. Essentially dispositional properties are also often called powers, and I will follow the norm in treating them as interchangeable.

As my account is restricted to fundamental natural properties, many of my examples will be between electrons *A* and *B* with electrons being understood to have both mass and charge dispositions. [3] For now, I will say that negative charge is the "disposition to repel other negative charges and attract positive ones", and vice versa for positive charge, and I will treat mass as the disposition to attract other masses, although these definitions will be substantially revised in chapter three (Bird 2007, 45).[4]

1.1.2) Potentiality

I am using the term 'potentiality' in a similar sense as Vetter makes use of in her dispositional account of modality, although where Vetter takes potentialities to be synonymous with dispositions, the Megarian Actualist obviously disagrees (2015). When I speak of a disposition's 'potentiality', I am referring to the manner in which a disposition is related to certain possible outcomes. Potentiality consists in something having an actual essential relation with some non-actual possibilia. To say that a disposition has a potential to cause a certain result, is to say that the disposition has a primitive relation with that outcome. A primitive modal relation which cannot be reduced to anything else. As Vetter puts it, "Potentiality is, metaphorically speaking, possibility anchored in individual objects" (2015, 3). It is this primitive, essential modal feature of dispositions which I take issue with. This involves an important distinction between possibility and potentiality. Mere or ordinary

[3] I will be treating changes in electron mass due to velocity as inconsequential.
[4] Bird takes mass to instead be the "disposition to change the curvature of space-time" (Bird 2007, 166). For my purposes it is enough to simply make use of mass attraction and avoid unnecessary complexity.

possibility is the sense in which a vase could explode at any moment, it is technically possible, however it would be strange to say that the vase has the potential to explode. Vases are simply not disposed toward exploding, unless it is a particular kind of explosive vase. Vetter agrees that ordinary possibility is too weak to characterise dispositions. She instead argues that the potentiality of dispositions is a stronger notion, characterised by a kind of "easy possibility"; that to say a vase has the fragile disposition is to say that it would break easily, which Vetter cashes out in terms of there being a large proportion of possible worlds in which a vase would shatter (2013, 9).

While I am not concerned with whether or not less natural properties essentially display easy possibility, I do argue that this is not the case for fundamental dispositions. My goal is not to eliminate ordinary possibility but to instead avoid any appeals to this kind of potentiality when characterizing the essential nature of natural dispositions. Megarian Actualism then opposes modal views of properties as possibles or potentialities, whereby the "modal nature [of dispositions] is that of possibility, best characterized (to a first approximation) by '*x* can M'" (Vetter 2014, 135). Instead, the Megarian Actualist argues for a non-modal or actualist account of dispositions, that the nature of dispositions is best characterised by the form 'x does M'. What the Megarian Actualist shares with Vetter's account is that dispositions are characterised by nothing but their manifestations (Vetter 2014, 134). This is a move away from the traditional counterfactual or conditional approach which would make for a trivial analysis of Megarian dispositions, as their manifestations are always actual if the disposition is instantiated (Bird 2007, 109).[5] As such, the only manifestation condition for a Megarian manifestation is if its token disposition exists.[6]

The move is from characterising dispositions according to their potential manifestations, to instead characterising them by their always actual, necessary manifestations. My goal is then to develop a Megarian Actualist account that specifically eliminates potentiality in the above sense from the essences of dispositions.[7]

[5] Although opposed to Bird's claim, this does not lead to Megarian Actualism trivialising modality generally as I argue later.

[6] I am taking exist to mean existing in actuality.

[7] I also take it to be the case that if something is concrete and actual, then it is not potential, or at least that its potentiality is grounded in its actuality. To say that something which is moving has the potential to move, is simply to state a truism similar to the claim that if something is necessarily the case, then it is possible.

1.3) Megarian Actualism

The Megarian Actualist account centres around the core premise that "particulars must always manifest their powers" (Friend 2021, 10522). I want to endorse the strongest possible interpretation of this claim, that particulars always manifest their powers because a token disposition essentially has no unmanifested manifestations. What a disposition can do is then exhausted by what it actually does. No matter the situation, a particular token disposition will produce the same, constant manifestation because its nature lies just in producing that manifestation.

For example, if something has a velocity of seven metres per second, then it must be moving at seven metres per second, otherwise it would not have that particular token disposition. If it moves more slowly, then it has a different velocity token with a lower value.

Megarian Actualism means rejecting one of the core premises of traditional dispositionalist accounts, that "that particulars can have dispositions even if those dispositions are never manifest" (Tugby 2013, 451). Dispositionalism traditionally characterises powers by their potential manifestations and so Megarian Actualism is largely undefended, Friend's *Megarian Variable Actualism* being the only other attempt to resuscitate the theory (2021). My focus is on laying the groundwork for the Megarian Actualist account, demonstrating its application by eliminating potentiality, and showcasing its explanatory strengths.

As a position famously lambasted by Aristotle, the reason that Megarian Actualism has had no defenders ever since, is because it is obviously the case that dispositions are not always accompanied by their corresponding results, the fragile vase is not always shattering and the musician is not always making music (Aristotle, 9.1047a). This is partially addressed by restricting the argument to only fundamental natural properties, however it is still clear that electron A is not always repelling some electron B to move to the right. And so, if charge is defined as the disposition to move oppositely charged objects away and similarly charged objects closer, then Megarian Actualism is false.

And so, a key part of my argument is that the manifestations for dispositions like charge and mass have been misidentified. In Chapter two I draw on the existing accounts of Mumford and Anjum as well as Molnar, to argue that manifestations are not complex effects but rather singular, spontaneous contributions to complex effects. In chapter three I put this conception to work and argue that the contributing manifestations for charge and mass should be identified as always actual fields.

Furthermore, Megarian Actualism is a theory about property instantiations, not property types. It is only concerned with the actuality of manifestations for particular dispositional instantiations, token dispositions. To say that the dispositional type of mass must have all possible manifestations actualised is a ridiculous claim. As Friend points out, the token instantiations of fundamental natural properties have quantitative value (2021, 10528). To have mass is to have a certain value of mass, be it one gram or ten. Megarian Actualism for property types would require there to be an existing object for each of the infinitely many possible mass instantiation values, a one-gram object, a seven-and-a-half-gram object, a four-kilogram object, ad infinitum.[8]

Megarian Actualism should also be distinguished from actualism generally, Megarian Actualism is just the claim that the essences of dispositions are not essentially potential. Megarian Actualism is then not an attempt to produce a reductive account of modality or eliminate modality entirely. It is a claim about the grounds of dispositional modal claims, namely that these modal claims are not grounded in the essences of fundamental natural dispositions. Megarian Actualism is neutral with regards to whether modality is primitive or reducible.

Lastly, it also important to understand Megarian Actualism as a metaphysical position rather than an empirical one. Upon reflection I think many would be quite happy to agree that our world seems to be Megarian, at least in the sense that dispositions are always active. Subatomic particles are constantly interacting everywhere all at once, such that massed objects are always pulling at other massed objects and so dispositions never get a chance to take a break. Now this is not the strict kind of metaphysical necessity which I am interested in, rather it is just a contingent necessity. Dispositions are necessarily always manifesting because our world is the way that it is. Megarian Actualism as I defend it is the claim that powers are essentially Megarian, always manifesting. Contingent Megarian Actualism is the claim that our world is a Megarian Actualist world, but that it is not essentially the case that natural fundamental properties are always manifesting. There is good reason to think that our would is Megarian, namely that fundamental natural properties do seem to always manifest.

Furthermore, if Megarian Actualism is true it means that contingent Megarian Actualism is also true, however one can be a contingent Megarian Actualist while rejecting essentialist Megarian Actualism. For example, if one wishes to hold the position that

[8] Although this could maybe be avoided by restricting property types to universal constants.

dispositions are essentially relational, in that their being consists in relations to other dispositions, then a possible counterexample to Megarian Actualism might be a possible world where there is only one charged electron (See Yates 2015). In such a world, the disposition has no partner to be in a relation with and so it would not manifest and would not be a Megarian disposition. Contingent Megarian Actualism would then admit the truth of this counterexample, while still maintaining that in the actual world where there are always multiple partners, fundamental natural dispositions are Megarian.

I am only concerned with the essentialist version of Megarian Actualism, firstly because it is the more interesting position and secondly because I have doubts as to whether contingent Megarian Actualism can be adequately justified without a Megarian metaphysics. The Megarian Actualism I defend is then not a contingent claim about the world, but rather the position that the world is the way that it is because there are essentially Megarian dispositions.

1.4) Motivations and the Meinongian Problem

The purpose of my argument is not just to resurrect a position dead since the dawn of philosophy, but also to prove it a useful position by demonstrating how Megarian Actualism can be applied to contemporary dispositionalist issues.

Why would someone want to be a Megarian Actualist? One deciding factor is that it matches very well with our scientific understanding of certain properties. For example, Friend, as well as Esfeld and Sachse, argue for a Megarian position on the basis that it captures all scientific properties (2001, 67; 2021, 10539). Another benefit is that the Megarian Actualist is able to avoid a host of well-known issues relating to possible interference between a disposition and its manifestation via finks, maskers, and the like. For the Megarian Actualist, if the disposition is present then it is metaphysically necessarily that its manifestation is as well. Furthermore, eliminating primitive modality from dispositional properties make the theory much simpler, instead of needing to account for how dispositions are ‘directed’ to their manifestations, there is a simple necessity relationship instead. All things being equal, being able to posit a single, constant manifestation is neater than needing an infinite number of possible manifestations.

Additionally, by departing from potentiality which is a core component of other dispositionalist theories, Megarian Actualism offers novel solutions to problems which

plague the potentialist account of dispositions. The prime example would be the various versions of the Meinongian problem which was first raised by Armstrong and now covers a wide range of issues with how dispositions essentially relate to their non-actual or potential manifestations (Armstrong 1997, 79; Bird 2007, 99-131; Psillos 2006; Tugby 2013). The issue lies in the essence of something actual being made up out of something potential, in this case the essence of a disposition lies in its relations with real possible manifestations. This directedness towards some possibility leads to the counter-intuitive conclusion that the being of something actual can be made up out of something which is not only non-actual but also may never become actual (Molnar 2003, 60). It also means that there are non-actual possibilia to be related with, thereby treating non-actual possibilities as real (see Bird 2007, 111- 114; Coates 2022, 2).

The Meinongian problem is a serious one and dispositionalists have offered responses. One being to accuse Armstrong's categorical theory of having the same issue, however this does not provide a positive answer (Bird 2007, 106; Handfield 2005, 546). Examples of positive defences include arguments that the directedness connection is non-relational or that the relation can be avoided or grounded in a non-problematic way through universals, but it is controversial as to whether these solutions actually succeed (Bird 2007, 107-111, Coates 2022, 5; Molnar 2003, 61; Tugby 2013, 461-462).

Regardless as to whether any of these solutions are effective, the Megarian Actualist provides a novel solution, one which does not carry the same commitments. Megarian Actualism is the position that particular, instantiated dispositions always manifest, it is an account of disposition and manifestation tokens. One of its principal advantages is that it makes no claim as to the nature of property types; the Megarian Actualist can still be a realist about universals, however they may also be a nominalist or trope theorist. By not relying on a relation between universals, Megarian Actualism opens up the way for both nominalist and trope conceptions of dispositions.

The Megarian Actualist core claim bypasses the Meinongian problem quite easily, or at least there is an easy avenue for argumentation. The Meinongian problem arises because dispositions are considered potencies towards some possible manifestation, however if this premise is denied then the accusation withers away. By removing the potentiality commitment, Megarian dispositions simply do not have essential relations to non-actual events. If a disposition is instantiated, then the manifestations constantly and necessarily

follows suit. Furthermore, the Megarian actualist provides one unified solution to these issues instead of needing to employ a variety of individual defences, all of these applications stem from the core premise that dispositions essentially always and totally manifest their manifestations.

1.5) Megarian Variable Actualism

I am not the only one exhuming dead positions. Friend's *Megarian Variable Actualism* is the only other existing Megarian Actualist account, and so it merits special analysis. While Megarian Variable Actualism is in some ways a metaphysically weaker account than the Megarian Actualism I will defend, Friend's theory is a valuable source for many of the claims the full-blooded Megarian Actualist commits to.

Friend's argument focuses on demonstrating how the kinds of property, stimulus and manifestation relations characterised by scientific equations of properties can be readily explained within a Megarian Actualist theory and can fend off notable objections to the position.

The key to Friend's argument lies in an appeal to quantitatively multitrack dispositions (Friend 2022, 10528). For Friend, Megarian dispositions are quantitatively multi-track in that the scientific equations which constitute their qualitative nature can be manifested at different values (2022, 10528). Mass can be instantiated at one gram or one tonne, but either way both are still mass properties. He then applies this to Megarian Actualism, arguing that scientific dispositions are always active because they are always manifesting some particular value depending on other variables. For example, depending on the context charge can repel an electron with five newtons of force or fifty, however despite differing quantitative manifestation values, both are unified as charge. [9]

This means that although the context might change, and thus a particular manifestation value might disappear, the disposition will remain active because it always responds to this changed context with a new manifestation. The disposition has a variety of manifestations, and just because one may unmanifest does not mean the disposition is no

[9] Friend also later goes on to develop a pandispositionalist Megarian actualist account. However, as I am restricting my discussion to just natural properties this part of Friend's account will be glossed largely over.

longer active, instead dispositions have a variety of variables, all of which are associated with the same token disposition.

Friend then utilises this account of quantitative multi-track dispositions to defend against four of the most notable problems associated with the theory; that Megarian Actualism trivialises modality, Megarian powers fail to explain their manifestations, that Megarian Actualism trivialises the acquisition and loss of powers and the common-sense objection already discussed (2021, 10523-10525). I provide my own responses to these objections in chapter four.

The first issue is Bird's complaint that Megarian Actualism trivialises modality (Bird 2007, 109-110; Friend 2021, 10523-10524). By denying that manifestations can be non-actual, Bird argues that the Megarian Actualist is forced to deny the claim that "non-trivial counterfactuals can be made true by facts in the actual world alone" (Bird 2007, 109). If dispositions are characterised as counterfactuals, then an always active manifestation means that the relevant counterfactual cannot be false. This leads to a world where the only possibility is actuality, things cannot be other than they are, otherwise it would be manifested. And so according to Bird, the Megarian Actualist trivialises modality by denying all unrealised possibilities (2007, 110). If Bird is correct then this is a legitimate issue, there seem to be plenty of unrealised possibilities, and it seems like we can talk about these unrealised possibilities meaningfully. It appears like it was possible for Socrates to not be executed, just like it seems possible a vase could or could not shatter. If manifestations are always actual, then counterfactuals are always trivially true and so there are no non-trivial counterfactuals. And even if it is the case that the world is determined, we should still want a theory which is not committed to this.

Friend avoids this problem by arguing that the quantitative multi-track nature of dispositions allows for modal flexibility. It may be the case that a disposition has to manifest itself, however there is room for modality in how it manifests (2021, 10531). For example, charge must manifest by attracting or repelling, however the strength of that repulsion varies depending on what it interacts with. An electron could manifest one newton of force or a thousand depending on the strength and location of the charge it is interacting with.

The second problem is raised by Molnar. Molnar points out that dispositions are supposed to play an explanatory role in causal interactions, the reason that a fragile vase would shatter if

struck is because it has the fragility disposition (Molnar 2003, 98). Because the Megarian Actualist ties the instantiation of a disposition to an active manifestation, the power instead seems to become dependent on the manifestation for its instantiation (Friend 2021, 10524). And so, if the manifestation occurs then that causes the object to possess the power, the vase being shattered is what makes it fragile. Dispositions then become "ontologically parasitic on those interactions" instead of explaining them (Molnar 2003, 98).

Friend provides two responses to Molnar, first arguing that ontological dependency could very well be in the opposite direction, with manifestations being dependent on dispositions. In which case, manifestations do not co-occur because they determine the presence of the power, rather it is that manifestations occur because the disposition is instantiated. [10] Friend's second response is to appeal to multiple kinds of explanatory power. Even if it is the case that dispositions fail to explain the existence of a manifestation, there is still a "causal-nomic sense of dependence" which exists between dispositions and manifestations (Friend 2021, 10532). There is a regular relationship which holds between a disposition and its various quantitative manifestation values. For example, mass and gravitational force are proportional in that if an object has a greater instantiation of mass, then it generates a greater attractive force. Megarian dispositions can then play an explanatory role by explaining why manifestations manifest in the way that they do.

Problem number three dates back to Aristotle. Aristotle argues that Megarian Actualism leads to problematic acquisition and loss conditions for dispositions. A builder may have the ability or disposition to build but according to the Megarian Actualist, "when the artist ceases to practice his art, he will not possess it; and if he immediately starts building again, how will he have re-acquired the art?" (Aristotle, 9.1047a). Because Megarian dispositions are co-present with their manifestation, whenever a manifestation is not present, the disposition must similarly be absent. A gambling addict would only be an addict while gambling, their vice cured upon simply falling asleep or running out of money. However, this does not seem to be correct, the manifestation conditions for a manifestation are largely not identical to the acquisition and loss conditions for the associated disposition. To lose a gambling addiction requires great effort, to not gamble for a moment does not.

Friend's solution lies in properly identifying the manifestation conditions of a disposition. He argues that the force of Aristotle's argument stems from an incorrect

[10] Friend offers grounding as one possible alternative relation.

assumption that manifestation conditions are heavily restricted (2021, 10532). Instead, Megarian manifestation conditions are extremely generous because Friend takes dispositions to be quantitatively multi-track. The Megarian Actualist's point is not that dispositions are constantly and trivially being acquired and lost, rather the idea is that dispositions are being manifested constantly and over a wider range than is first realised. There is not just one manifestation for a disposition, but rather a vast range of values. Acquisition and loss conditions thus remain robust because losing or gaining a disposition requires addressing all these possible manifestations.[11]

A final issue which Friend raises is the common-sense objection. It just appears obvious that dispositions are not always manifesting, the vase is not always shattering nor is the irritable individual always annoyed. Manifestations are not constant and rather depend on the context to be realised.

The first response is the one I adopt, by restricting the set of properties which are plausibly always manifesting, in Friend's case down to scientific properties. While Megarian Actualism is dubious for dispositions such as shattering, it is more plausible for properties such as charge or conductivity. Friend then argues that Megarian Variable Actualism can be extended to all properties by claiming that effects can be considered manifesting even when they are not noticeable, that zero-value manifestations are not absences of a manifestation but genuine manifestations (2021, 10536). So, a vase not shattering is really a display of an active shattering value of zero. This is certainly an interesting argument, and while it may be counter intuitive, I do not think it is worth rejecting out of hand, although my account does not make use of the argument.

Additionally, there are two core differences between my and Friend's account. The first is that where Friend takes manifestations to be effects, I take manifestations to be contributions, following the views of Molnar and Mumford. The second is that I do not take dispositions to actually be quantitatively multi-track. Instead, I take the nature of dispositional

[11] An interesting extension of this argument is available to those who accept qualitatively multitrack properties. The Megarian Actualist can claim that dispositions also manifest in more ways than is realised. A gambling addiction might not just manifest when gambling, but perhaps also in some chemical imbalance, a relation between id and ego, or a structural arrangement in the prefrontal cortex.

manifestations to be singular and constant. As I see it, there is one, wholly actual, constant manifestation for each disposition.[12]

> Certainly, one should not expect the Megarian view to be that a determinate instance of a power variable is manifesting all possible values of the manifestation variable all the time—Megarianism is supposed to sound strange, perhaps, but not incoherent! (Friend 2021, 10530)

The view I intend to defend is close to what Friend here deems as incoherent. This alleged incoherency is due to Friend taking manifestations as effects and so by instead taking manifestations to be contributions, I will show over the following chapters that it is not so strange of a position after all.

My problem with Megarian Variable Actualism is that it does not fulfil my goal of eliminating potentiality from the essence of dispositions, and thus avoiding the Meinongian problem. Because not all values are actual, Friend's dispositions still essentially stand in a relationship with non-actual manifestations. For Friend, while it is true that some value of an instantiated property is always manifesting, it is still the case that the disposition remains potentially disposed to manifest a whole range of other values. For example, when a charged object is exerting a force on another, it still has the potential to produce other possible forces if something else were to also interact with the disposition. Friend's Megarian Variable Actualism is only committed to one value needing to be manifested, not all of them; and as such, is still vulnerable to the argument and does not seem to provide any new tools for dealing with it.

Instead, I argue that manifestations should be understood as totally actual fields; that all the possible manifestation values of a particular token disposition are manifested at the same time, all the time, enabling my view to avoid the Meinongian problem. My Megarian dispositions are not multi-track like Friend's because instead of advocating for an infinite number of individual manifestations, fields are singular wholes which contain all their possible values as parts.

Now Friend does not in any way claim to deal with the Meinongian problem, however neglecting it means overlooking what is the most obvious application of the account. As such. I believe my account adheres more to the spirit of Megarian Actualism and offers alternative

[12] Constant not in the sense of being uniform, but rather always actual.

if not greater advantages, even if Friend's account is still plausible. Another way of phrasing the distinction is that for Friend, a Megarian disposition is always doing something, whereas for me it is always doing everything.

1.6) In Summary

The purpose of this chapter was to provide the necessary background information sufficient to locate my account within the current literature. My central aim is to eliminate potentiality from pure powers and in doing so I am explicitly engaging with contemporary dispositionalism. One of the most notable problems for dispositionalist account is the Meinongian problem, and I suggest that Megarian Actualism provides a powerful and simple solution to the issue by denying that dispositions are essentially potential. I identify my means for eliminating potentiality as the development and defence of a modern and particularly strong interpretation of Megarian Actualism for fundamental natural dispositions. Megarian Actualism is the view that particular dispositions are always active, and I outline my argument that this should be interpreted such that manifestations are totally actual and there are no unmanifested manifestations. I also discuss Friend's Megarian Variable Actualism, the closest account to mine, and note the main problems they identify for Megarian Actualism and which I will later address.

2) Megarian Manifestations

Overview

This chapter aims to clarify the notion of manifestation most relevant to the Megarian Actualist by drawing on the extant accounts of Mumford and Anjum and then Molnar. The discussion will be initially framed around Mumford and Anjum's pandispositionalist vector model of causation, as it shares key similarities with the account I wish to develop. I begin with an overview of their causal account in section two, showing how Mumford and Anjum take vectors to interact and combine to produce effects which can all be represented using vectors for both causes and effects. In section three I move on to the particularly relevant understandings of property interaction and manifestations as contribution which the Megarian Actualist will adapt and adopt. I argue that complex effects fail to fix the identity of dispositions because they confuse manifestations with effects and demonstrate how Mumford and Anjum avoid this problem by viewing manifestations as contributions to effects rather than effects themselves. Section four is where I reject Mumford and Anjum's account of contribution as it leaves the ontological status of manifestations unclear. I instead defend Molnar's view of manifestations as contributions. I argue that Molnar's position has been misinterpreted and that instead of advocating for contributions as mysterious new ontological entities, Molnar instead takes manifestations to be simple events.

2.1) The Vector Model

Mumford and Anjum are pandispositionalists, they take all properties to be powers or bundles of powers (2011, 3 & 82). Where dispositional essentialism argues only that some natural fundamental properties are essentially dispositional, the pandispositionalist instead argues for all properties, sparse and abundant, to be essentially dispositional. Be it charge, squareness or tableness, all are characterised entirely by their function alone. And so, while the dispositional essentialist might take a wheel's disposition to squeak to be nothing more than a mere disposition, the pandispositionalist draws no such distinction and instead views it as a full-fledged power. They also take the relation between dispositions and their manifestations to be a causal relation (2011, 8).

There are two core elements of Mumford and Anjum's account, the first is that powers act to cause effects through contributions. The manifestation of a power is not the effect, but rather its contribution to the effect.. The second core element is that powers beget powers (2011, 5). When powers interact, they cause more powers, which in turn cause further powers and so on. This means that Mumford and Anjum consider the manifestations of dispositions to themselves be powers. Powers thus become responsible for every step in a causal chain.

They then argue that the causal actions of powers can be represented through vector diagrams, and so because all causation is a matter of powers, causation itself operates according to the vector model they develop. This rests on the belief that powers exertions have magnitude and direction in relation to a particular outcome. These magnitudes and directions can be plotted on a graph, and the sum of the result determines what effect occurs and the intensity of it (2011, 24). The vector model then operates under the premise that "[c]ausation occurs when powers exercise themselves" (Mumford & Anjum 2011, 6). Mumford and Anjum take causation to be the result of powers directly interacting with one another which can be represented through vector combination (2011, 28 & 121). It is thus important to distinguish between scientific vectors and Mumford and Anjum's usage of vectors as powers. While a vector is usually known as "a representative device that appears in mathematics and in physics … used as a way of representing forces (Cartwright 1999: 54). As vectors are used here, however, they are being used to represent the exercising dispositions or powers" (2011, 24). Furthermore, they also choose to represent every "causally relevant factor as a vector" (2011, 24).

For example, a blanket has a weaker disposition towards heating someone up than a heater, the blanket produces a shorter vector than the heater. However, a blanket and a heater working on one person produce an even greater intensity of heat, they together produce a vector of heat which is the sum of both their vectors put together. [13]

This view of multiple, individual vectors or causes composing to produce an effect is based on a combination of a Millian and a modern conception of a singular determinate cause (2011, 13). The idea is that they adopt Mill's notion of a total cause, the cause being the result of multiple factors acting at once, while also endorsing a more modern view of causes which Lewis advocates for, where an effect has an individual cause. In Lewis's sense, the cause of my falling over is someone pushing me, meanwhile in Mill's sense the cause of my

[13] Mumford and Anjum later qualify vector composition to allow for non-linear and emergent composition (2011, 96-104).

falling over has to do with my being pushed, my being clumsy, the floor being slippery, the force of gravity on me, and so on. Mumford and Anjum advocate for both senses of a cause, that individual vectors as causes act to produce effects while these factors also combine such that it is the sum of them all working together which makes an effect occur. Effects are thus largely the results of complex property interactions, multiple powers working at once. This leads to their account of mutual manifestation which I address in the following sections and to some degree adopt.

Importantly, the vector model is a model for how causation works, not what causation is. Instead, Mumford and Anjum take causation as primitive and argue that any attempt to analyse causation by reducing causation to dispositions is doomed to failure (2011, 7).

Two final general remarks are firstly that Mumford and Anjum advocate for a view of events as being changes, although I will not settle on this, nor any other account of events for the Megarian Actualist at present (2011, 23). Secondly, similar to the Megarian Actualist, Mumford and Anjum also reject a counterfactual analysis of dispositions. However, where they instead argue for a primitive dispositional modality the Megarian Actualist instead opts for an analysis of dispositions as always active functions (2011, 175).[14]

2.2) Mutual Manifestation

It is important to distinguish Mumford and Anjum's sense of mutual manifestation from that of other accounts of mutual or joint manifestation, such as Heil's. Heil's position is that the identity of powers lies in their joint effect, the event which they manifest directly together. Heil takes manifestations to be cooperative ventures between dispositions which together jointly manifest a particular event. And so, "the same power [can] manifest itself differently with different kinds of reciprocal disposition partner" (Heil 2012, 75).

This kind of position does not work for the dispositional essentialist because dispositions obtain their identity from their manifestations. Identifying the effect as a manifestation is a mistake when dealing with property interactions because powers can work to bring about effects which are unrelated or even contrary to their nature. What makes a token disposition a token of some type, is that it functions in accordance with its type. To be

[14] In chapter 4 I do provide something similar to the Mumford and Anjum's idea of a modality "in between" necessity and possibility, however I argue this is due to manifestations partial fixing causal factors and not a primitive kind of modality (2011, 175).

an instance of charge, requires that it behaves as charge, otherwise there is nothing to distinguish it from any other disposition. If it functions in some other way, then it is some other property. If a property repels a massed object, then it must not be mass because that is not what mass does.

Take an electron *A* repelling another electron *B*. While it may appear fine to say that the total effect is the manifestation of charge because electron *B* moves away from electron A, this fails to account for the fact that there are other dispositions at play here. Mass is also a disposition possessed by electrons, and so applying the same logic, the manifestation of Electron *A*'s mass is also the repulsion of Electron B. This leads to the claim that the manifestation of mass is the repelling of another massed object, the opposite of what it is to be massed under the standard dispositionalist model.

One response would be to say that mass simply does not manifest in this situation, it is only charge which manifests because it is only the repelling force which acts. Firstly, this would not provide an explanation for why the total applied force on Electron *B* is equivalent to the repelling force of *A*, minus the attractive force which mass would manifest. It would be very peculiar for a disposition to manifest differently according to other manifestations which do not occur. Furthermore, the mass of *A* could very easily be simultaneously attracting some other non-charged object, Neutron *C*, in which case the lack of manifestation towards Electron *B* is even more inexplicable. There needs to be an explanation for both charge's change in manifestation and mass's lack of manifestation, otherwise the total effect fails as a manifestation because it leads to dispositions manifesting against their nature. Heil possibly avoids this concern by appealing to qualities (Heil 2012, 71). By taking the identity of dispositions to lie not only in their mutual manifestations but also their qualitative identity, Heil can argue that even when dispositions manifest against their nature, they still remain the dispositions they are due to their qualitative element fixing their identity. However, this move is unavailable to the dispositional essentialist because they take the essence of a disposition to be entirely determined by their functional role.

Mumford and Anjum, as well as Molnar, understand this issue of identity full well. So, to avoid this mismatch between effects and powers, they argue that manifestations are

contributions to effects, not effects themselves (McKitrick 2010, 73; Molnar 2003, 194-198 ; Mumford 2009, 103-104; Mumford & Anjum 2011, 30-33).[15]

So, for Mumford and Anjum, the shattering of a fragile vase is the joint effect of the contributing fragility manifestation of the vase with the contributing mass manifestation of the strike, the shattering effect is a bundle of powers such as sharpness and velocity. The power of sharpness can then perhaps contribute to an effect of my being cut by working with my power of vulnerability. This view makes 'mutual manifestation' a misleading term for Mumford and Anjum's position, mutual manifestations are not the manifestations of their contributing powers, they are just effects caused by interactions between manifestations. [16] This is an unnecessarily confusing terminological choice, why call something which is not a manifestation a manifestation? So instead I choose to call 'mutual manifestations', complex effects.

Cartwright raises an important objection to this position, arguing that for vector addition, while contributing manifestations are produced, they do not actually exist but are merely metaphorical (1983, 60). What exists is only the resultant effect, if something is pushed weakly to the left and strongly to the right, it just experiences a weak force to the right. Mumford and Anjum respond to this position, arguing that component forces cannot be so simply eliminated. They present the example of two teams tugging on a rope (2011, 30). The forces at play may be perfectly balanced, and such there is no net force; however to say that there is nothing happening here seems to be a mistake. Furthermore, if one of these contributing forces did not exist, if a team member was absent, then there would be a different result (Mumford & Anjum, 2011). If Cartwright were correct, then by removing a team member on the right I would be applying a force to the left, while this is indeed the resultant effect, it is not what I am actually doing. I then agree with Mumford and Anjum, the existence of the component forces plays some role in the resultant effect, and so component forces are plausibly actual and can actively contribute towards zero-value effects. [17]

This core understanding of how powers and manifestations relate to effects is what the Megarian Actualist shares with the vector model. "Effects are brought about by powers manifesting themselves", in the sense outlined above where manifestations are understood to

[15] Cartwright also has a similar view, taking dispositions to manifest as "exertions" towards some effect, however Cartwright is less willing to take these exertions to be real (Cartwright & Pemberton 2013, 2).
[16] I discuss effects and contributions more in the next section.
[17] This should be distinguished from Friend's view which takes zero-value effects to be active manifestations.

contribute to effects (Mumford & Anjum 2011, 7). Powers manifest *themselves* individually, not through mutual interactions, instead effects are taken to be the results of those individual contributions interacting. Where the vector model tries to extend this idea to account for causation, my goal is to move in the opposite direction and see what this claim says about the nature of dispositions and their manifestations.

A notable consequence of this view is that it leads Mumford and Anjum to make some very Megarian claims. First, that at least some powers can act spontaneously, they can manifest without any stimulus (2011, 37). This means that Mumford and Anjum are endorsing a view of dispositions which rejects the counterfactual analysis and so is plausibly consistent with Megarian Actualism and Vetter's view of dispositions, where powers are characterised by manifestations alone (Mumford & Anjum 2011, 151-154).

Furthermore, this argument for spontaneity also leads them to the position that some manifestations may always be active, a weak Megarian view. They argue that even in situations where effects may not be noticeable, the power may still be actively manifesting. An example they provide is fragility, suggesting that the vase may always be 'breaking', but it is held together by opposing active powers such as stability and elasticity (2011, 37). This suggests that fragility is always manifesting and it is only its associated effect which is contingent. While the Megarian Actualist does not actually endorse this view for non-natural properties, the idea that dispositions are always active is a core element of the Megarian Actualist account.

The vector model is then consistent with taking at least some vectors to be Megarian contributions. The Megarian Actualist could then quite easily adopt the vector model by asserting that when representing fundamental natural dispositions, the vectors are Megarian and always active. The world is then at its base a place of active manifestations or contributions with their observable effects depending on how these vectors end up composing. While this does not yet fulfil my goal of eliminating essential potentiality from dispositions, it does demonstrate how Megarian Actualism can be incorporated into the work already done within Dispositionalism.

The Megarian actualist largely agrees with this model of causation as interactions between manifestations, the disagreement lies in the ontology of dispositions and their manifestations.

2.3) Contributions

If manifestations are not effects, or at least not effects produced by causal interactions between properties, then this obviously raises the question as to what manifestations are supposed to be. Mumford and Anjum may call manifestations contributions, but what does it actually mean to say that a manifestation is a contribution? Looking at Mumford and Anjum's account, "the manifestation of a power will, for any pandispositionalist, be itself a further power or cluster of powers" (2011, 5). So, a contribution is itself a power for some further power. This view muddies the water between manifestations and dispositions, they become essentially the same thing but in different positions of a causal order (Mumford & Anjum 2011, 134). This raises questions as to the ontological status and identities of dispositions and manifestations, and as the Megarian Actualist is not committed to the pandispositionalist position that powers beget powers, I prefer to avoid these questions altogether and reject that manifestations are powers.

If contributions are not powers, then the Megarian Actualist needs another position to hold. One option lies in McKitrick interpretation of Mumford and Molnar's idea of contribution as a "term [that] is reserved for a newly postulated kind of entity-something that exists in addition to the power and the effect" (2010, 81). Taking manifestations to be entirely new ontological entities is an obviously unattractive option. However, I am not so sure that the dispositionalist, and the Megarian Actualist, has to commit to as great of a distinction between manifestation and effect as McKitrick suggests.

It seems to me that the difference between manifestations and effects is a matter of interaction. An effect is an interaction between properties or causes, whereas a manifestation is independent. Both a manifestation and an effect might be events, with the only difference being complexity in constitution. While McKitrick is right that Mumford denies that manifestations are events, I think contributions as events is precisely the view that Molnar, the one who coined the term, actually endorses. (McKitrick 2010, 81; Mumford 2009, 104). Despite sharing the same terminology, Molnar's view is quite different from Mumford and Anjum's. For example, Molnar is not a pandispositionalist, making his account more amenable to the Megarian Actualist position. So, I will exchange Mumford and Anjum's view on contribution for Molnar's and argue that contributions are events.

Throughout Molnar's "The Elements (I): Properties" or "The Elements (II): On What There Is" there is no mention of contribution, and only two passing mentions of manifestation.

If Molnar genuinely takes a contribution to be a new distinct kind of thing, then you would expect him to discuss it here. Instead, what Molnar does mention is events, and the relation between complex and simple events. For Molnar, events can be simple and complex, with complex events having simple events as their parts and simple events having no other events as parts (2003, 37) Molnar draws an analogy between events and objects, and so as an object's parts can be distinct from their whole, so too can simple events be distinct from the complex events they are part of. For example, the event of me hitting a tennis ball may be a part of the larger event of Wimbledon, but my hitting of the tennis ball could also exist independently of Wimbledon, as it usually does.

With this in mind, it is time to turn to Molnar's mention of contribution, "[a] manifestation is typically a *contribution* to an effect" (2003, 195). This claim emerges from Molnar's argument that most effects are complex, that they are the result of the interactions of multiple manifestations and powers. For example, any given electron's being repelled is going to involve the interaction of a nigh uncountable number of other charged and massed objects interacting to produce the net result.

In light of Molnar's earlier passage on events, it should now be clear that he views manifestations as events. Effects are events, effects are complex events, and therefore effects are made up of simple events. If that is not enough, elsewhere Molnar speaks of "the manifestation *events* towards which the dispositions are directed" (2003, 60, emphasis added)". He carefully distinguishes between manifestations and effects, dispositions are not directed towards effects, they are directed towards their manifestations (2003, 60).

Contribution and effect are not being used as metaphysical categories by Molnar, they are merely explanatory terms. His usage of effect is not to capture objective causal primacy, it is rather the same sense in which we might say that a falling domino pushing over a vase is a cause while the vase smashing is the effect. In reality, the falling domino is itself an effect, perhaps of some earlier domino, but in this restricted context it is not the effect but the cause. And if two dominos were to push over the vase, we might instead say that both dominos acted as contributions to the effect of the vase smashing. Accepting manifestations as contributions is then not accepting some "mysterious new entities into our ontology" it only requires recognising a distinction in the complexity of events (McKitrick 2010, 73).

For Molnar, effects are usually synonymous with complex events that are the results of multiple simple events working together. The important distinction Molnar is trying to get

at by referring to manifestations as contributions, is that powers are directed to singular, simple events, not complex events. Any event which is due to an interaction between multiple powers then fails to qualify as a manifestation for a power.

This also deals with McKitrick's specific objection to manifestations as events: that if contributions are not effects but rather events, then this would undermine the point of the distinction, because this new event would just be another effect (McKitrick 2010, 81).

This argument relies on two premises. Firstly, that any event which has a cause is an effect, and secondly that dispositions have a causal relationship with their manifestations. [18] However, even if both these premises were to be accepted, McKitrick's argument still holds no weight against the position outlined above. Molnar can just say that manifestations are simple effects, effects whose only cause is their power. Whereas complex events are not manifestations, they are the results of causal interactions between multiple simple events. Molnar's position would instead just be that manifestations or contributions are simple events with only one cause, not effects of causal interactions.

Here is an illustrative analysis. Take my swinging a bat at a ball and sending it flying, in this case I have the power at work here. The manifestation of a power is its functional role, what it does. So, the question arises as to what is it that I did in this situation. Obviously, I hit the ball, but that is not directly what I did. The ball being hit is evidently the effect, but that is in a sense due to the bat hitting the ball. Instead, what I did, my function, was to swing the bat. The effect need not have occurred, I could have missed, but my function, swinging, would have remained the same.

This scenario can be nit-picked and while the analysis does not actually work for mere dispositions, the Megarian Actualist does believe it holds true for fundamental natural dispositions. [19] For the Megarian Actualist, manifestations are singular whereas effects are the results of complex causal interactions between multiple manifestations.

[18] As opposed to grounding or some other dependency relation

[19] Swinging the bat is really an interaction between bat and hand. Furthermore, the manifestation for the power to swing the bat would actually be caused by the contraction of muscles, which would in turn actually be caused by some electrical impulse via the nervous system, and so on.

Molnar accepts Kim's argument, that "[e]vent identity is itself defined in terms of property identity" and argues that property and event identity define one another circularly, but not viciously (Molnar 2003, 60; see also Kim 1993, 35).

However, I will remain neutral on precisely what account of events the Megarian Actualist should adopt. To make any informed claims will first require the development of the Megarian position. It will be necessary to work out the nature of manifestations more precisely at some point, however my principal focus for this paper is on the nature of dispositions and eliminating potentiality from their essence. I will do some work in clarifying the nature of manifestations in chapter three, however it will not be exhaustive. I will thus proceed with the account that manifestations are events as a placeholder position until a more focused examination of the nature of Megarian manifestations and their relations to their dispositions can be done. For my purposes, manifestations, or 'contributions', as events work as a solid enough foundation.

2.4) In Summary

This chapter was largely focused on identifying the conception of manifestations of most use to me in developing the account of Megarian Actualism I intend to argue for, that manifestations are contributions not complex effects. To do so, I drew on influential works within contemporary dispositionalism, namely Mumford and Anjum and Molnar. I began with an overall analysis of Mumford and Anjum's dispositionalist account of causation as a vector model. Causes are represented as vectors which can collectively act towards one effect which is the sum of the individual vectors. I move on to their specific understanding of property interactions, where complex effects are the products of multiple contributing manifestations, and I argue that alternative accounts run into issues with properly fixing the identity of dispositions. I then replaced Mumford and Anjum's account of contributions as powers, instead choosing to clarify Molnar's position that manifestations are simple contributing events, not complex effects or mysterious new ontological entities, and arguing that it is a reasonable position for the Megarian Actualist to take. Much of the core Megarian position has thus already been developed. According to the version of Megarian Actualism that I am going to propose, manifestations are contributions, simple spontaneous events without stimulus.

3) Megarian Actualism

Overview

The previous chapter established the basic account of manifestation which I will now use to develop a Megarian Actualist account of fundamental natural properties like charge and mass. I will argue that these dispositions are best understood as having fields for manifestations, totally manifested qualitative events which contingently contribute to complex effects involving the exertion of force between particular charge and mass instances. I use this account of manifestation to establish a broad framework and take a position on many of the important questions a fully developed Megarian Actualist account will need to address.

Section one is a general defence of the position that fields can be manifestations. I point out that the ordinary conception of manifestations as contingent force interactions is incompatible with the Megarian Actualist account and that fields are a promising alternative. I point to others who have made similar claims within the literature such as Esfeld and Sachse as well as Ellis. In section two I argue that the simplest means to avoid a regress accusation is to take fields to be qualitative events. In section three I work out many of the key features of fields, arguing that they are always actual infinitely extended events whose strength is proportional to the strength of their instantiation, but which diminish in strength over distance. I also argue that fields and their points do not have direction, only a gradient. Section four is where I demonstrate how fields can fulfil all their possible causal roles because what they contribute to any particular interaction is just the part of their field at the location of the interaction. Lastly, I argue that my Megarian Actualist account implies a strict necessary connection between disposition and manifestation which can be best characterised as a grounding relation where a token disposition grounds a particular field.

3.1) Manifestations as Fields

The standard dispositionalist account of the nature of charge and mass is evidently not Megarian. Charge is usually understood to be the power to produce a repelling force on a like charged object and an attractive force on an oppositely charged object. The manifestation of charge would then be either an attractive or a repelling force depending on what it interacts

with (Bird 2007, 21). Mass is similar, it can be understood as the disposition to produce an attractive force on other masses.

Obviously the Megarian Actualist cannot commit to the claim that all manifestations of charge and mass are actual in this sense. For example, this would require some electron A to always be pushing another electron B away, however electron B might not be there at all to be pushed on. It would also require Electron A to be always pushing on some other electron Z, which does not even exist but could. Lastly, it is just obviously the case that electrons are not always being repelled away from other electrons, otherwise they would all scatter to the edges of the universe to be away from each other.

For the Megarian Actualist, the key phrase in these descriptions of mass and charge is the phrase "on another". Charge as a force on another object makes the manifestation the interaction between the electron and that other. Based on the discussions in chapters 2, the Megarian Actualist will want to claim that any event which is an interaction fails to provide the adequate basis for a disposition's identity. As discussed earlier, in the right conditions an electron can end up acting to attract another electron. Instead of adopting these complex events as manifestations, the Megarian Actualist maintains that there is some underlying simple, singular manifestation which contributes to these effects.

The obvious answer is to say that the force in isolation is the real manifestation, however I will resist this conclusion for two reasons. Firstly, the force which a charge or mass disposition would produce on another is the product of their instantiation strengths and distance. This makes force itself an effect of that interaction, although a more generic sense of force which is not an effect might be amenable to what I argue for shortly. Secondly, as Friend points out, these dispositions appear to be quantitatively multi-track. The Megarian Actualist must account for more than just the particular interaction between one electron and another, the manifestation needs to explain all possible interactions. If electron A is interacting with electron B, and then electron B is swapped for another differently charged object, the manifestation A produces must stay the same despite producing a different effect with this new object, or else there would be an unmanifested manifestation appearing. Alternatively, if electron B were to be teleported to some other location, then electron A would instantly produce a new force at B's new location. What is needed for the Megarian Actualist, is an actual, constant manifestation which can still simultaneously fulfil all the functional roles which are usually ascribed to potential manifestations.

Therefore, instead of having interactions or scientific forces be manifestations for charge and mass, I suggest the Megarian Actualist argue that charge and mass manifest as wholly actual charge and mass fields. The manifestation of charge is a constant, actual electric field and the manifestation of mass is a constant, actual mass field.

I am not a physicist, but the concept of a field is at least familiar from physics and taking a look at the encyclopaedia Brittanica:

> Instead of considering the electric force as a direct interaction of two electric charges at a distance from each other, one charge is considered the source of an electric field that extends outward into the surrounding space, and the force exerted on a second charge in this space is considered as a direct interaction between the electric field and the second charge. (Britannica 2023, Electric Field)

Here the electric field is treated in the manner I suggest, as a distinct manifestation which contributes to the produced force. I will prefer to speak of mass and charge fields rather than established terms like the electric field. From what I can tell it is actually a kind of electromagnetic field, rather than an electric field, which is the fundamental entity associated with electrons in current physics. Furthermore, there appears to be distinctions between classical and quantum electromagnetic fields. What is important for my purposes is that it is agreed that there is some kind of entity which underlies and contributes to the associated effects of dispositions like charge and mass. This should not be taken as an argument to the effect that the standard dispositionalist view should be thrown out, merely that there is support for the Megarian position as an alternative. For the Megarian Actualist what is "considered" above is indeed true.

Moreover, this is not a completely novel idea within philosophy either. Ellis characterises charge in terms of a field, claiming that "[a]ll electrons have the same capacity to generate electromagnetic fields" (2001, 67).[20] And despite Molnar's rejection of Megarian Actualism, he too seems to suggest that some dispositions such as mass can be Megarian dispositions, "powers that are exercised for as long as they exist. When they cease to be exercised they cease to exist. They cannot be switched on or off. They have no toggles. Rest mass is such a power" (2003, 86-87).

[20] Although Ellis is of course not a Megarian Actualist

Additionally, Friend points to Esfeld and Sachse, who also argue that dispositions such as electric charge and mass have fields for manifestations which necessarily manifest and are spontaneous, always actual and require no stimulus (Friend 2021, 10539).

> [T]he immediate [manifestation] of a point-like charge is not the attraction of opposite-charged and the repulsion of like-charged objects, but generating an electromagnetic field … [and] nothing can interfere with the charge generating an electromagnetic field (Esfeld & Sachse 2011, 39-40).

Esfeld and Sachse then agree with the Megarian Actualist, arguing that spontaneous manifestations, like fields, are a plausible interpretation of scientific properties and allows there to always be evidence of a disposition's instantiation, meaning dispositions can always be distinguished in virtue of their differences in manifestation (Esfeld and Sachse 2011, 37-40). For the traditional dispositionalist, a world with only a single massed object is functionally indistinguishable from a world with only a single charged object; with nothing to interact with, these dispositions cannot manifest. Because all there is to a dispositional property is its function, without a manifestation there is no difference between the properties. On the other hand, if you are a Megarian Actualist then these isolated dispositions can be distinguished by the different fields they manifest independently of partners or conditions, there is then always something which can be used to tell dispositions apart.

This should provide adequate support for the primary premise of this section, that charge and mass dispositions are fields. While not a wildly popular idea, it has some traction within the literature, enough to show that it is at least a conceivable position to hold.

3.2) Qualitative Fields

There is a very real concern that all the Megarian Actualist is doing by appealing to fields is just pushing the Meinongian problem back. While it may be the case that a Megarian disposition has no essential relations with non-actual possibilia, because its manifestation is always actual, the manifestation now seems to be dispositionally related to the effect. The Megarian Actualist accepts that effects are contingent and so now the essence of a manifestation, such as a charge field, seems to lie in its relation to this non-actual but possible effect, possibly repelling some other like charged object for example. The Meinongian problem arises for anything which is essentially dispositional and so if manifestations are in turn dispositional, then the problem will not really be resolved at all.

Firstly, even if all I am accomplishing is just relocating the problem, this is less of a pushing back than a pushing forward. By locating modality outside of the essence of dispositions, there exists new possibilities for dealing with the issue. For example, the Megarian Actualist might want to try and reduce or relocate primitive modality to relations. However, I will not try to provide an exhaustive analysis of the possible positions a Megarian Actualist can take here, instead I will offer what I take to be the easiest solution to the regress accusation.

The regress objection arises if it is assumed that the field is *essentially* dispositional or is characterised by an essentially dispositional property. Bird makes the point that it is important to differentiate between dispositional predication, mere dispositions, and ontological dispositionalism (Bird 2016, 20). And so, I make that distinction here, a field is dispositional, in that it would produce an effect if the conditions were correct, however it is not essentially dispositional. This is because the 'manifestation' of a manifestation is not modally fixed, at least not within my framework. It is not essentially the case that a field will manifest a force or effect, a lonely electron would not. Whereas it is the case that a charge disposition will essentially manifest its charge field.

Other dispositional essentialists have made similar claims, for example Ellis suggests that "the categorical properties in nature must all be ontologically dependent on the dispositional ones, and on the spatial, temporal or other relations that may exist between things whose essential properties are purely dispositional" (Ellis 2002, 70). I will not make such a strong claim as that all categorical properties must depend on dispositions, however the idea that categorical properties *can* arise from purely dispositional properties is the same argument that I am making here.

This makes fields qualitative events. They are themselves functions of some disposition, but what they in turn do, is due to what they qualitatively are. While a Megarian disposition is what it does, its field does what it does because of *what it is*. It is admittedly difficult to get a clear positive idea of what it is that a field is, we seem only able to observe fields through their effects, not in and of themselves. It can help to illustrate the idea with an analogy, one which should be treated as little more than an intuition pump and a conceptual image.

Take a stiff breeze in an open area, this breeze is like a field.[21] As the wind blows there is nothing for it to interact with, however it is certainly there, just no observable effect of it being present. If I were to stand outside, I would experience the force of the wind, but it would seem silly indeed for me to believe that the wind manifests itself in response to my being outside. The effect may only occur once I am outside, but the wind was already present, it was just unnoticed. Furthermore, this breeze is actual at all points, the breeze is in the space before me, the breeze is behind me, and the breeze is to my sides and above. If I move closer to the source of the wind then the breeze on me feels stronger, and if I move further away it feels weaker. While my movement does change the effect I experience, this movement does not change the nature of the breeze. My being closer is not causing a stronger wind to manifest, the wind does not blow harder because I get closer to its source. Rather, it is just that the wind is independently stronger closer to the source, regardless of whether I am there or not. The disposition is the source of the wind, the breeze as a whole is the manifestation, and my being blown against is only a contingent effect.

To the Megarian Actualist, standard dispositionalism is an egocentric view; taking powers to go unmanifested is akin to stepping outside and assuming that the wind has manifested in response to you. Just because the power is only noticed by its interaction, does not mean it is dormant when its interaction partners leave. This might indeed be the case, however it is certainly not necessarily true that if one causal factor is contingent, so too is the other.

The analogy is flawed in a variety of ways; for example, wind is the movement of something, but fields are not, and wind strength decreases because of interferences like friction. However, this should suffice as a conceptual image as it captures a number of the features of fields I will shortly discuss as well as the important similarity that while a breeze is a manifestation, the identity of a breeze is not constituted only by its dispositional role. A breeze may have the disposition to blow against something, but its identity consists in being moving air molecules. Similarly, all we may observe of a field is its effects, but it too is independently actual. The difference to take note of is then a fundamental, non-fundamental distinction; where wind is built up out of various molecules, a field is taken to be a fundamental event, dependent on its disposition alone for its existence but not constituted from anything.[22]

[21] This example was suggested to me by my supervisor Ashley Coates

[22] I discuss the nature of this relation between disposition and manifestation towards the end of this chapter.

This still leaves much wanting as to what the nature of a field actually is. I do some of the necessary work in what is to come, however as my focus is on eliminating potentiality, the features I identify are those most relevant to the modal nature of manifestations and dispositions. What the categorical nature of a manifestation consists of, as well as any alternative conceptions, is something that I leave open for now in order to make progress on my goal and justify the motivation for wanting to even do so in the first place.

3.3) The Features of Fields

The next step in developing my Megarian Actualist account is establishing the features of fields. Fields need to be such that they can adequately fulfil the causal roles usually attributed to an infinite variety of possible manifestations. For example, an electron seems to manifest its charge differently depending on the distance between it and another charged object. The Megarian actualist cannot avoid the problem by simply locating modality within the other property a disposition interacts with, charge interacts with charge and so this would just lead to both dispositions exchanging potentiality.

Friend makes the argument that Megarian dispositions are characterised by their scientific equations and so one option is to characterise dispositional fields by making use of scientific field strength equations such as the equation for an electric field: $e= k.Q/ d^2$ (2021, 10527). This calculates e, electric field strength in Newtons per Coulomb. Q represents charge in Coulombs, d is distance from the token charge disposition in question, k is Coulomb's constant and lastly e is the strength of the field measured in Newtons per Coulomb.

However, this field equation assumes an interaction with a charge of one Coulomb, this means that it represents field strength in terms of the force it can produce with another charge, its potential effects.[23] But this is not to say that the equation offers us nothing about the features of fields. It does demonstrate two key elements of a dispositional field that the Megarian Actualist is interested in. Firstly, the equation suggests that fields extend infinitely. No matter how far the distance gets, the strength of the field may diminish but never quite reaches zero. Friend mentions this as well, arguing that just because the strength of a manifestation may become so small as to become inconsequential, does not mean it should be

[23] A similar test disposition is used for other field equations.

assumed to have vanished. (2021, 10533-10534). This is essential for the Megarian Actualist because if any finite field distance is set, the placement of an extremely powerful disposition beyond this distance would cause an observable effect, and therefore a possible contributing manifestation, to appear. If an infinitely dense mass suddenly appeared at the edge of the known universe, we would all be tugged towards it, even if there were no observable interactions between our masses and other lesser masses that far out.

The second feature is of more practical importance, the strength of the dispositional field is proportional to the strength of the disposition, 'Q', and inversely proportional to the distance, 'd', of the field from its instantiation.[24] So, the greater the strength of the instantiation and the shorter the distance, the stronger the field. This means that while any particular point of a field has a different strength to the points at any other distance, all the points are unified by their relation to their instantiation which determines their strength. A charge of 10C and a charge of 5C differ in that their fields have differing strengths at the same relative distances. The Megarian Actualist argues that there is just one field for each token disposition, which diminishes in strength over distance. This field is modally fixed, in any world a disposition will produce the exact same field, such that its strength at any point at the same relative distance is identical. No matter what the situation, the field point exactly one metre away from a one Coulomb charge will always have the same strength.

What precisely this field 'strength' is a strength of is another difficult question. For now, I treat it just as a means of comparison which underwrites the possible strength of the force a field would produce. However, whether strength should be understood as something like intensity, density or some other means of comparison will have to come after further investigation into the nature of fields themselves.

Comparing this account to the vector model immediately raises the question as to whether fields and field points can be considered vectors. While dispositional fields and their points certainly have magnitude and position, I am hesitant to attribute direction to them. First of all, fields and field points do not have direction in the sense of movement. They are not waves, they are fixed relative to their associated instantiation. If an electron moves then its field

[24] While the field strength equation suggests that the field grows infinitely strong as it approaches the instantiation point, understanding the field strength at a point as a proportion explains this peculiarity. To say that the strength of the field approaches infinity simply means that it approaches the full strength of the instantiation. A value at any field point is a fraction of its token disposition strength, and at a distance of zero it is no longer a fraction but instead the whole value. The infinite force suggested by the scientific equation just represents the impossibility of having two objects co-located.

moves with it, but the field never moves independently of this. All there is to a field point is it representing a field's strength at a point; to be able to move would require an independent identity which it does not have. Movement would also imply fluctuations of field strength, and this would mean that any field point would not be manifesting all possible values at once, which would allow potentiality into the nature of dispositions.[25] Field points can be treated as stationary waves, but there is never any independent movement.

The next question is whether fields have direction in a similar manner to vectors or arrows, in that they are somehow 'pointed' in some particular direction, with this direction causing or being able to cause movement in that direction. While it may be quite natural to think of a mass field as having an attractive direction, a direction inwards in this manner, charge proves to be a problematic disposition to deal with. This is because a field point of charge would appear to be contradictory, in that it would have both an attractive and repulsive direction.[26] So, fields and their points do not have one particular direction in this sense either.

Instead, what the field as a whole does have is a gradient, a direction in terms of diminishing magnitude. It is clear that movement is according to this gradient; an electron is repelled faster the greater the strength of the field at its position, and it moves outwards from strong to weak as if on a slope. We can then treat the point of instantiation as the peak of this slope. However, there is no reason to prioritise a particular direction inwards or outwards outside of an interaction, a flight of stairs is not inherently directed upwards or downwards after all. Rather, it is the kind of interaction which determines how the field affects its target and then the direction follows the gradient. Like charges then interact in such a way that they follow the gradient outwards, whereas opposite charges gain a direction inwards. Fields do not have a particular direction, but particular direction is according to the gradient.

There is more ink to be spilled on the potentially contradictory nature of the charge disposition. I choose to avoid the contradiction by denying direction, however one, this is a disputable solution, A gradient commits the Megarian Actualist to the same kind of modest emergent causation as Mumford and Anjum, a mass field produces a pulling but is not itself a pulling. (Kim 2006: 191; Mumford and Anjum 2011, 102). And two, I am not so sure the

[25] There may be a concern that fields are never actually constant and instead fluctuate at a point. If this is true, the Megarian Actualist's explanation would be that fields never end up actually being constant because their instantiations are always moving, however they are constant relative to their instantiation.

[26] Although if mass were to instantiate with negative values it would likely face the same problem.

contradiction need be avoided. It might be possible to embrace the idea of a charge field as a kind of simultaneous pushing and pulling, thereby regaining a more intuitive understanding that causes make for similar effects. However, I adopt the gradient position for now and leave this discussion for future Megarian models of causation.

Thus, the Megarian Actualist is able to accommodate charge and mass as Megarian dispositions just fine. Fields are already necessarily associated with dispositions such that their strength is proportional to the strength of the instantiation, and so the manifestation relation fits well as an explanation as to why fields and dispositions co-vary. Manifestation fields are shown to be simple, singular events which are manifested spontaneously and constantly. These fields infinitely extend and the intensity of the manifestation decreases the further it is from its point of instantiation. This may not be an exhaustive list of features, but it is certainly a useful set for the Megarian Actualist to work with. This makes Megarian manifestations differ significantly from the manifestations of ordinary dispositionalism, setting the account apart and likely opening up a variety of alternative solutions to dispositionalist problems and novel applications for dispositionalism generally, most of which I will ignore in favour of focusing on the Meinongian issue at present.

3.4) How Fields Contribute

With this understanding of fields as infinitely extended wholes, it is now possible to demonstrate how dispositions can contribute to all their possible effects while producing only a singular, actual manifestation.

A singular manifestation for charge and mass is potentially problematic because it would mean that if I were to take two separate but simultaneous property interactions, say electron A acting on electron B at distance *x*, and electron A acting on electron C at distance 2*x*, then I would be committed to saying that the same manifestation is contributing at both these points, despite the fact that the force produced and the contribution value at Electron C would be substantially weaker because it is further away. Friend explains this by taking dispositions to be qualitatively multitrack, however I take a different approach. For my account, the causal contribution involved in a particular property interaction is identical to the electric field in that it is a *part* of the electrical field at large. So, when Electron A acts upon electron B which is at location y, the part of A's field at y is what acts as electron A's causal

contribution for that particular property interaction. There is then indeed a sense in which the same manifestation is contributing in two different ways, but this is simply because two different spatial parts with different strengths are interacting at those locations.

Returning to the breeze analogy, when a breeze blows on something, the force experienced has seemingly two causes. On the one hand, we are generally quite happy to say that the cause is the breeze as a whole. However, if we were to be more precise, we might instead say that the cause of the force were the air molecules actually acting on the object. In other words, what is involved in a particular causal interaction is not the whole of the breeze but instead only a part. The Megarian Actualist moves from this intuition to claim that what is involved in particular charge and mass interactions is a particular part of a field. Fields are contact causes, it is the part of a field at some object which is involved in any particular interaction with that object. The field as a whole acts as a contribution, by contributing the strength of its field at the location of the property interaction to *cause* some effect.

Charge and mass dispositions produce fields, these fields are simple events which extend outwards, with their strength varying in proportion to the strength of their instantiation and inversely proportional to their relative distance. Fields interact at objects as contributions and then produce an effect which is the product of the strength of their fields at that point. [27] Powers are understood to interact *because* they produce fields. When an object is within a field, the particular part of the at the object field acts with the object to produce an effect. This is not causal inflation, the field does not cause the part of the field, they are the same event. Every charge and mass effect is then the result of a field part interacting with an object, but the contribution of the field point never changes.

Taking fields to be contact causes also provides a nice explanation for the reciprocity of property interactions. Newton's third law, "for every action there is an equal and opposite reaction" holds for interactions between fundamental natural properties. If one disposition's charge field interacts with charged object, then both objects will experience an equivalent effect. The Megarian Actualist framework provides an informative explanation of this phenomenon. When two unequal dispositional fields interact, their produced force upon each other is equal because their fields weaken due to distance in proportion with one another. Take the ten Coulomb electron A, interacting with a one Coulomb electron B over some distance. Electron A's field point at B's location may only be a tenth of its instantiation

[27] Mumford and Anjum agree that for dispositions such as mass and charge, their vectors produce forces which are products not sums (2011, 96).

strength, and so together they would interact to produce a value of one. Whereas at Electron A, its own field will be at its full strength of ten, but Electron B's field will so weak as to only have a strength of a tenth of a Coulomb. The product of their interaction will then still equal one. It then always works out that objects interacting through fields, always experience exactly equal forces, despite any differences in the strengths between their fields.

This also makes for a neat account of how dispositions interact simultaneously with multiple different properties in different locations. The world is a busy place and in reality, dispositions are not interacting with just one other disposition at a time as most philosophy examples suggest. Where the vector model needs to posit countless individual vectors to account for every actual and possible interaction a power engages in, the Megarian Actualist can unify all these individual manifestations within one field. If anyone should be accused of causal inflation, it should be the ordinary dispositionalist. Megarian Actualism posits just one actual event for any property instantiation which can then account for all property interactions. Instead of this one constant event, the dispositionalist appeals to an infinite number of possible individual vectors or effects essentially tied to each token disposition.

This holds true for interactions over time, continuous causes, as well. As Mumford and Anjum agree, causal interactions are not just snapshots of an instant (2011, 26). Instead, causal interactions are largely dynamic. This is evidently true for interactions between fundamental properties. If an electron repels another electron, it will continuously repel it. The repulsion is greatest when the electrons are closest and diminishes as they grow further apart. What is important to note here, is that the repulsion grows weaker because the contribution applied grows weaker, the *same* contribution grows weaker. The other variable affecting the repulsion is the strength of the repelled electron's charge which does not change. The contribution is one continuous cause which diminishes in strength. This is accommodated perfectly within a Megarian understanding of manifestations as fields. There can be the same contribution even with a different value because it is the same field present but weaker parts of it interacting.

Moreover, The Megarian view fits very nicely with the vector model's modernised Millian view of cause, that effects are due to the sum of the underlying causal factors; it is just the balance of fields on a charged or massed object which determines how it behaves. Causal factors can be singled out, but they alone do not necessarily cause their associated effect. This is a key element of dispositional interaction in that it shows how fields *contingently* produce

effects. While the relation between disposition and manifestation is one of strict necessity, this does not carry higher up the ontological chain. The Megarian Actualist accepts the contingency of effects but denies the contingency of the contribution. A disposition necessitates a particular contributory causal event, but this does not necessitate a particular effect. Instead, it is the contingent balance of causal factors which determines if the effect actually occurs. This is essential for explaining how a Megarian Actualist can account for ordinary modal claims while still avoiding the Meinongian problem. As such, it becomes an important part of the discussion in chapter four's "Potentiality as Partial Fixity*"* where I further investigate how manifestations modally contribute to effects and the relation between dispositions and these associated effects.

The Megarian Actualist now has a basic account of causal interactions between properties like charge and mass; dispositions manifest as fields while objects interact with their field parts to produce effects. Megarian Actualism shows plenty of promise in providing a robust ontological foundation for a model of causation, perhaps one even compatible with the vector model to some extent as mentioned in chapter two. There is still a huge amount of work to be done in developing an actual Megarian model of causation, although perhaps some of that work can be imported from the vector model. However, the basic understanding that manifestations are fields that are always totally manifested events but can contingently contribute to particular effects, suffices for now and proves useful in analysing Megarian modality in the next chapter.

3.5) Connecting Dispositions to Fields

By trying to eliminate potentiality, the Megarian Actualist must make manifestations totally actual. There is no possibility of a token disposition not being accompanied by the entirety of its manifestation.

This entails a straightforward interpretation of the dispositionalist claim that "[t]he connection between power and manifestation is necessary, in the sense of absolute or strict necessity" (Molnar 61). Instead of having to abandon necessity and argue for a new primitive dispositional modality as Mumford and Anjum do, the Megarian Actualist accommodates necessity unconditionally (2011, 181-183). If an object has a power, then necessarily it manifests that power or, if a power instantiation exists, then the manifestation exists full stop.

The relationship between fields and their dispositions is a matter of metaphysical necessity, it then remains to further determine precisely what kind of necessary relation this is.

Mumford and Anjum take the relation between disposition and manifestation to be causal (2011, 8). However, if we take their argument that causes do not necessitate their effects, then this account would contradict the Megarian Actualist's position that manifestations are essentially always manifested (2011, Chapter 3). Scepticism surrounding the necessity of cause and effect has a rich pedigree, and so it would be prudent to look for a different kind of explanation (See Hume 1739-40, 1.3.14.24). Instead, a grounding relation, such as Friend suggests, seems to be more apt. The Megarian Actualist can take the strength of the field, "the manifestation variable [,] to be "fully grounded in [] the power variable" (2021, 10531).[28] The disposition is thus the ontological ground for its field such that if the ground exists, the disposition is instantiated, then essentially and necessarily the grounded field exists as well (Fine 2012, 38-39).[29]

This is a one-to-one grounding relation instead of the many-to-one relation grounding is usually viewed as being; however there is little reason to restrict grounding such that a singular ground cannot sufficiently explain a singular explanandum (Fine 2012, 21).[30]

A more concerning objection is whether the Megarian actualist is building something out of nothing, can qualitative events be grounded in the essentially dispositional? One way to view this accusation is a version of the Meinongian problem of Too Little Actuality, that by lacking actuality a disposition cannot serve as an adequate ground for the wholly actual (Bird 2007, 101). Under this interpretation the Megarian Actualist can obviously respond that Megarian dispositions are every bit as actual as the qualitative events they ground. As long as Megarian Actualism proves to avoid the Meinongian problem then this concern falls away as well.

The other way to interpret the objection is as a concern over whether an essentially *functional* property can ground an essentially *qualitative* event. I see this as simply being an anti-dispositional bias. Bird makes the same point to a similar critique by pointing out how

[28] Grounding understood as being a non-causal, necessary dependency relation (Fine 2012, 37).
[29] The nominalist about properties would want to reverse the direction of this relation such that dispositions are grounded in their fields. This position would require substantial revisions elsewhere but otherwise seems plausible.
[30] An interesting alternative to grounding is an identity relation between disposition and manifestation. This position does not work with my overall account as it stands, however McKitrick does suggest something similar as well (2010, 83).

dispositions at minimum match the features of Lewis's qualitative properties, with more to them besides (2007, 102-103). If anything, a Megarian power is better suited to acting as a ground than a categorical property. A token disposition is a totally actual property, and it is already essentially tied to what it grounds. If what we want is an account of what makes the world go round, then Megarian dispositions as instantiated properties which essentially and necessarily ground certain causal events makes for an appealing explanation.

3.6) In Summary

I have developed the broad framework for a Megarian Actualist account that takes dispositions to be always active, modally fixed and independent properties with manifestations that are totally actual, singular, constant, spontaneous and simple qualitative fields.

I have argued that fields makes for viable manifestations, and shown that I am not the first to make this claim. I have also made strides in clarifying the ontological nature of dispositions as categorical events and picked out their relevant features such as infinite extension, diminishing strength and gradient. With the basic ontology in place, I show how it is to be put to work, arguing that fields contribute towards particular causal effects by contributing the parts of their fields located at these interactions. I then conclude that the modal connection between manifestation and disposition is one of strict necessity, arguing that this is best understood as a grounding relationship where dispositions ground their fields.

Along the way I have flagged numerous areas where additional work still needs to be done, however I hope to have shown that Megarian Actualism does not look to be such an incoherent position after all, and that it promises a great deal of explanatory power.

4) Modality, Meinong and Potential Problems

Overview

I now finally turn to formally addressing the Meinongian problem and arguing that Megarian Actualism does succeed in eliminating potentiality from the essence of fundamental natural dispositions, thus avoiding a Meinongian ontology. I also work to clarify the nature of the modal relations which exist between disposition, manifestation and effect and defend against the three main objections to Megarian Actualism as pointed out by Friend.

Section one shows how Megarian Actualism avoids the Meinongian problem by simply denying non-actual manifestations all-together and thus avoiding any problematic relations between disposition and possible manifestations. I then also argue against the need for an essential potential relation to explain contingent effects by providing an analysis of potentiality as a non-essential partial fixity relation, thereby providing a complete solution to the Meinongian problem. In section two I address the concerns of Molnar and Aristotle, arguing that their criticism stems from the incorrect view that the dependency relation for the Megarian Actualist must move from manifestation to disposition. Section four addresses Bird's concern that Megarian Actualism that trivialises modality at large, arguing that the distinction between effect and contribution neatly avoids the concern. I then finally conclude by acknowledging and examining other potential problems for the Megarian Actualist.

4.1) Avoiding Meinongian Dispositions

The Meinongian issue arises because dispositions are generally thought to have their essences constituted by relations with possibilities, non-actual manifestations, and that this is a problematic relation for something's actual essence to be in. The Megarian Actualist nips the critique in the bud by immediately disputing this first premise, instead arguing that dispositions have their essences entirely fixed by their relations with totally actual manifestations alone.

The key to doing so is the strictness of my Megarian Actualist account. It is not just that dispositions are always active, but that potentiality is denied because there are no possible manifestations whatsoever. This is obviously hard to stomach for many ordinary

dispositions, the vase is not always shattering after all, however chapter three outlines a plausible account for fundamental natural dispositions whose manifestations are not effects, but instead always totally actual fields.

Because the essential relation between manifestations and their token dispositions is one of strict metaphysical necessity, it is absolutely impossible for a disposition to be instantiated without its manifestation following suit. A Megarian disposition's manifestation is truly modally fixed; in all possible worlds, it is always the case that an instantiated disposition is accompanied by the entirety of its manifestation. And so, if there cannot be any non-actual manifestations, then there cannot be any problematic relations with them. A disposition can be lonely such that it does not or could not produce its associated effect, but this has no bearing on what a disposition essentially does, which for charge and mass is producing the relevant field.

It could be argued that because a disposition has an actual relation with its manifestation, it necessarily also has a potential relation with that manifestation, in the same sense that if it is necessarily the case then it must also be at least possibly the case. However this would be a trivial kind of potentiality to invoke and would be a confusion over what the issue at hand is. Potentiality such as this, possibility entirely grounded in the actual, is non-problematic in a Meinongian sense. The issue is with dispositions as potentialities, properties whose actual essence lies in possibilities which are non-actual. These are dispositions which contain a primitive possibility which cannot be reduced to just what is actual.

Furthermore, along the way I have shown the Megarian position to also come with a variety of other advantages when compared to traditional accounts. Megarian Actualism avoids identity problems with mutual manifestation, it explains complex and diverse causal interactions with only a simple single manifestation rather than needing infinite essential relations, and it allows for dispositions to preserve identity even when isolated.

I doubt many would object to my account of Megarian Actualism as a solution to the Meinongian problem, the reason that Bird and Molnar discuss it at all despite their objections is because it is an obvious and simple solution. The issues raised against Megarian Actualism are not that it does not solve the problem, rather the challenge lies in developing a coherent Megarian Actualist account which can support this solution while avoiding the associated costs. With chapter three I hope to have at least provided the framework for a complete, coherent account and so in what is to come I take the Megarian position I have developed so

far and apply it to these critiques, demonstrating that Megarian Actualism can resolve the Meinongian problem while still avoiding the issues thought to come with the account.

4.1.2) Potentiality as Partial Fixity

There is still a concern that even with entirely actual manifestations, Megarian dispositions miss the point that potentiality explains the relation between dispositions and their associated, contingent effects. The Megarian Actualist may eliminate potentiality from the essential relation between disposition and manifestation, but the Meinongian problem is not defeated if dispositions still have essential, potential relations with these complex events.

Apart from their individual critiques, I think Aristotle, Molnar and Bird also seem to share this explanatory concern that Megarian Dispositions fail to properly account for how dispositions explain their effects. I think Molnar puts it best in saying that "Megaric powers are quite incapable of playing any part in explaining the causal interactions in which they participate", however Bird also makes a similar point that Megarian dispositions collapse into mere conditionals instead of explanatory counterfactuals (Molnar 2003, 97-98; Bird 2007, 109).

The Megarian Actualism denies this accusation. There may not be an essential connection between dispositions and these associated effects, but this is not to say that have nothing to do with one another, they are associated for a reason. Dispositions are invoked to provide explanations for certain modal claims and so should still do that work in a Megarian framework. There needs to be something about the disposition which makes it the case that the effect is true in virtue of that disposition. The reason that electron A would repel electron B in the right circumstances still ultimately depends on something about what the charge disposition is. For the Megarian Actualist, the truth of this counterfactual is grounded in the fact that a charge essentially produces a charge field and then this field can contingently produce a force when interacting with another instance of charge. The Megarian disposition still does the work of explaining the modal claims dispositions are usually invoked for, however the difference is that the Megarian Actualist argues that dispositions do not entirely fix the truth of an effect's counterfactual. The counterfactual associated with an electron being repelled is made true by the contributing field, as well as certain stimulus conditions. A field pushes another object away, if that object happens to be within the field and if the balance of field strengths lies in that direction. While Megarian dispositions fully determine the modality of their contributing manifestations, they do not do the same for the stimulus

conditions of a counterfactual. The idea is that the modality of effects is not entirely determined by the nature of the disposition but rather a range of contingent causal factors as well. Cartwright makes a similar claim, "[t]hat motion. like any other [result], depends on how the environment is structured", while speaking about the relationship between resultant effects and capacities, which are essentially multi-track dispositions (Cartwright 1999, 59; Teller 2018, 718).

For example, electron A could repel electron B, if the balance of fields acting on electron B is such that a net force away from A is produced. It is the case that A is always producing the field, but the balance on B is not determined by A. Instead, any particular disposition only fixes the modality of one causal factor in a complex causal event, in this case the presence of A's charge field. The stimulus conditions for the associated counterfactual, what other dispositions are present and the arrangement of the objects, is left open to modality and thus so is the effect. Dispositions then transitively explain, and perhaps cause, their associated effects.

However, this does not imply a similar transitivity of identity. A disposition's identity does not lie in producing a field which then produces some effect, just in the field itself. Causal transitivity is contentious enough, transitivity of identity through causation is substantially more so. We might say that a vase is fragile because it is disposed towards shattering, but it is not fragile because that shattering might cut someone. And if we were to allow transitivity of identity in this case, there would be no end. The identity of dispositions would become completely indeterminable and trivial. A vase is fragile because it shatters, which then cuts someone, which then makes them sad, which then leads them to fixing the vase or quitting their job or calling a friend or really anything else. Any disposition becomes a power for anything and everything.

The partial fixity solution would not be available if dispositions were counterfactuals, because then dispositions would be essentially related to the possible stimulus conditions, once again admitting potentiality into the nature of dispositions. Dispositions do not necessitate their associated effects because they are not essentially tied to them, they only contingently and partially fix the truth of the causal factors at play.

The Megarian Actualist can then deny the essential potentiality of dispositions towards some complex effect as follows. In some possible world, electron A interacts with B, and in another possible world, electron B interacts with C instead, we would then probably want to say that

A has the potential to interact with C. This is true in terms of mere possibility, there could be a possible where both A and C exist and interact, in other words a world where A and C have actual property relations. But there is no *potential* for either of them to interact in the sense of their being an actual relation between A and the possible event of C being pushed. What makes it the case that A and C could interact is just that electron A produces a charge field and so in any world where they both exist, electron C would exist within A's charge field and would then experience a resultant force. If the disposition, and therefore the manifestation is present, and the stimulus conditions are correct, then the effect occurs. The work is done by the necessary manifestation and the context, there is no need to posit a further essential relation between the disposition and the contingent effect.

This leaves us with:

Partial Fixity: An effect is partially fixed if one of the factors which would necessitate its occurring are necessarily present, but not all factors are necessarily present.

Dispositions partially fix their associated effects in this manner; this is the relationship between disposition and effect which makes them associated in the first place. However, partial fixity is not a genuine ontological relationship, merely an explanatory one. There are no direct genuine, actual relations between disposition and effect, partial fixity is a transitive relation. Partial fixity occurs as a by-product of what a disposition essentially does and what a manifestation qualitatively is, with potential effects merely being born out of this.

This also provides an answer for why associated effects are more than just merely possible while being less than necessary, why they are potential. Instead of invoking a brand-new dispositional modality as Mumford and Anjum do, the Megarian Actualist argues that potentiality, or Vetter's 'easy possibility', is due to effects having their causal factors partially fixed (2011, 176). Vetter explains potentiality in terms of the proportion of worlds that an effect occurs in and the Megarian Actualist can take a similar approach (2014, 14). What dispositions do is increase the proportion of worlds in which an effect occurs by guaranteeing the actuality of one of the required causal factors. For example, it is far more likely to roll two sixes on a pair of dice if the one die is loaded and always lands on six. Dispositional modality is then a combination of necessity and metaphysical possibility. With this in mind, there is no longer any reason to believe that dispositions essentially have some real, irreducible potential towards certain possibilities. Instead, potentiality is just a by-

product of manifestation interactions and captures how certain effects are more likely because dispositions fix some of their causal factors. A charge instantiation has the potential to repel some other electron, merely in the sense that it necessarily manifests one of the factors which could interact with that electron. Charge's manifesting of the field has nothing to do with the possibility of it later repelling something away, charge's essence consists only in producing its manifestation, and so no actual relations with non-actual possibilities exist within a disposition's essence.

The Megarian Actualist can then have their always actual manifestations while still explaining how dispositions relate to their associated effects. The 'potentiality' relationship between a disposition and its associated effect does not involve any sui generis or primitive modality, nor is the relationship essential to the nature of the disposition. With this, the Meinongian problem is well and truly avoided. Megarian dispositions have no essential relations with anything but their totally actual manifestations and their apparent potentiality with regards to their associated effects is merely a result of how dispositions partially fix these effects by necessarily manifesting one of their causal factors.

4.2) Aristotle and Molnar's Objections

Aristotle and Molnar's critiques are similar in that I believe both take the Megarian Dispositionalist to endorse an incorrect view on the direction of dependency between manifestation and disposition whereby the disposition becomes dependent on the manifestation.

Aristotle's critique of Megarian Actualism is that it trivialises the loss and acquisition conditions of dispositions by extending these conditions to include manifestation conditions (Aristotle, 9.1047a). If a disposition is necessarily connected with its manifestation, then this means any situation which can affect the manifestation now also affects the underlying power. If the manifestation of a musician's musical disposition is a pleasant tune, then whenever there is no song there must no longer be any musical ability. Furthermore, whenever the musician decides to play a song and the musical manifestation re-appears, so too does the disposition mysteriously arise. This makes having a disposition a mere matter of circumstance, something which can all too easily appear and disappear. It also fails to recognise intuitive evidence of dispositions persisting, such as how someone with a musical

disposition is more inclined to manifest that disposition than somebody else, how skills improve and persist over time and that dispositions explain why a manifestation occurs.

However, instead of expanding the loss and acquisition conditions of dispositions to match manifestations, as Aristotle's Megarian Actualist does, the modern Megarian Actualist should restrict the manifestation conditions, making them identical to the loss and acquisition conditions of the fundamental natural disposition. It is not that Megarian powers are trivially acquired, rather their manifestations are more stubborn. My account accomplishes this by rejecting stimulus conditions as manifestation conditions and grounding manifestations in their token dispositions. If charge essentially grounds its field, then it is necessarily the case that the manifestation conditions of the manifestation become equivalent to that of its disposition's acquisition and loss conditions. The manifestation can only exist when its disposition is instantiated and when the power goes, so too does the manifestation. This is not because the manifestation has trivialised the disposition's acquisition and loss conditions as Aristotle argues, but rather the manifestation is entirely dependent on the disposition for its existence.

This is especially easy to apply to charge and mass, as these properties appear to not even have any loss and acquisition conditions aside from complete destruction. For fundamental natural dispositions such as these, the only condition to worry about is if the disposition exists. Charge and mass do not trivially come and go, instead their manifestations, fields, are totally actual as well.

The Megarian Actualist can then provide the same solution to Molnar's closely related critique that Megarian powers become "ontologically parasitic" on their manifestations (Molnar 2003, 98). This too is due to Molnar falsely assuming that the Megarian position is one where powers become dependent on manifestation conditions instead of manifestations necessarily depending on their power to be active for them to be actualised. By grounding manifestations in their dispositions, the Megarian Actualist avoids any concerns over the direction of dependency for properties like charge and mass.

My responses are similar to Friend's, although there are of course substantial differences in our ontology, in that both our solutions involve reframing under what conditions a manifestation manifests. The grounding solution in response to Molnar is also one which Friend specifically makes mention of (Friend 2021, 10532). But where Friend relies on the abundance of possible effects associated with every disposition instantiation, I prefer to make

use of a single totally actual, simple, necessary manifestation. This enables the Megarian Actualist to avoid both Aristotle and Molnar's critiques, while still denying potentiality and thus defeating the Meinongian problem.

4.3) Non-trivial Modality

The key issue Bird points to with Megarian Actualism is that it seems to invalidate the modal nature of the effects dispositions are supposed to account for. The reason why events such as the movement of an electron require a dispositional explanation instead of a necessary explanation, is because movement only occurs sometimes depending on the circumstances and appears to be contingent. Even if one wants to commit to determinism about actual events, there is still a sense of metaphysical modality which should be preserved; in some other possible world something different could have happened. Most events do not seem absolutely necessary, not in the same sense as how one and one just must equal two. Things could have been different, even if that just means that the starting conditions of a world could be changed so as to produce different results later on. If the Megarian Actualist eliminates potentiality from the nature of dispositions, then the worry is that the position risks trivialising modality generally by making obviously contingent effects necessary.

My discussion on partial fixity should already be an adequate means of addressing this complaint. However, even if partial fixity is rejected, I can still show that the Megarian Actualist manages to separate the necessary connection between manifestation and effect from the modal connection between manifestation and effect.

Bird presents this objection by arguing with two key premises:

> (B1) non-trivial counterfactuals can be made true by facts in the actual world alone; or
>
> (B2) unmanifested dispositions can be parts of the actual world. (Bird 2007, 109)

And so according to Bird, the Megarian Actualist rejects the claim "unmanifested dispositions can be parts of the actual world … [but then] counterfactual propositions collapse into the corresponding material conditional … [and] this requires a denial of (B1)

also, because non-trivial counterfactuals are denied" (Bird 2007, 109). The issue with this position is that the Megarian Actualist makes modal claims trivial. No matter the antecedent, the consequent holds true; if struck the vase will shatter, but the vase will also shatter if it is brushed or looked at. As Friend points out, this argument requires the assumption that dispositions are best understood as counterfactuals, "the being of a counterfactual state of affairs involve unrealized possibilities" (Bird 2007, 109). And although Friend does not challenge this, the Megarian Actualist chooses to deny the counterfactual approach by taking Vetter's position that the identity of dispositions lies in their manifestations alone. (2021, 10524). And so, if Bird's point is just that there is something wrong with a disposition's identity condition being constantly true, then the Megarian Actualist wholeheartedly disagrees. In principle there is nothing wrong with saying that it is necessarily the case for a property to function as the property it is, in fact it is saying that a property might not function as the property it is which seems to be more problematic.

However, Bird's concern is not with dispositions always manifesting per se, but rather that it is impossible for their effects not to occur. If manifestations are always actual, then there is no room for possibility. Dispositions are often invoked to explain modal claims, such as if electron A were to be near electron B, then electron B would move. If it is always and necessarily the case that electron A is causing electron B to move, then there are no other possibilities aside from the one that is actual (Friend 2021, 10524). No matter what, the same effect occurs. The Megarian Actualist can assert that dispositions are not counterfactuals, but if their associated effects are necessary then this does not obviously avoid the problem. What the Megarian Actualist must do is demonstrate how the manifestation can be fixed without eliminating all possibilities aside from the actual.

My account accomplishes this by taking manifestations to be contributions, not effects. Divorcing manifestations from effects and stimulus conditions then allows the Megarian Actualist to deny that (B2) entails (B1). While the Megarian Actualist certainly accepts (B2), that manifestations cannot go unmanifested, where Bird takes manifestations to be effects, the Megarian Actualist takes manifestations to be spontaneous simple events. Bird argues that the Megarian Actualist must then deny (B1), that non-trivial counterfactuals can be made true by facts in the world alone, however this now trades on an ambiguity between manifestation and counterfactual. The Megarian Actualist denies that there are any non-trivial manifestations, because dispositions necessitate their manifestations, however they make no such claim about non-trivial counterfactuals. Instead, the Megarian Actualist can still accept non-trivial

counterfactuals which depend on some stimulus conditions to be met, however these are merely counterfactuals and do not correspond to fundamental natural dispositions.

(B1) is concerned with counterfactuals such as 'if electron A were to be near electron B, then it would repel electron B'. This should be a non-trivial counterfactual, it should be possible for it to not occur, but for the Megarian Actualist this counterfactual does not capture the essence of some power or disposition, it is merely a counterfactual. The counterfactual concerns an effect, not a manifestation. The kinds of counterfactuals the Megarian Actualist agrees to trivialise in (B2) are counterfactuals such as, 'if electron A were to be near electron B, *then it would manifest a charge field'*. This is trivial because 'being an electron', being charged, necessitates the presence of a charge field for the Megarian Actualist. We can then paraphrase the counterfactual to the obviously pointless, 'if an object manifesting a charge field were to be near electron B, then it would manifest a charge field'. However, this counterfactual is importantly different to the counterfactual describing the effect of an electron being repelled. (B2) and (B1) do not concern the same counterfactuals, and so moving from a denial of (B2) to the denial of (B1) is no longer a legitimate move. We can perform a similar substitution for the counterfactual in (B1) to create, 'if an object producing a charge field were to be near electron B, then it would repel electron B'. This counterfactual is not trivialised in the same way because the field is distinct from the possible effect of B being pushed. The actuality of a Megarian disposition then neither directly necessitates the effect nor does it do so indirectly through its field; if the field is always actual the effect need not be. This allows the Megarian Actualist to reject (B2) while still maintaining (B1), thus preserving modality generally.

4.4) Other Objections

Aside from these main objections, there are a variety of other possible problems that the Megarian Actualist should address.

One issue is that Megarian Actualism is open to a version of the causal efficacy problem, Megarian powers no longer seem particularly powerful (McKitrick 2005). What does all the causal work are the manifestations instead, leaving powers powerless and potencies impotent. There seems to then be no real need to posit a disposition over and above a manifestation if the manifestation does all the work. One solution which cannot be developed here is to accept this and take manifestations to be identical to dispositions. Far from being an obvious negative, this opens up an interesting new position.

A less dramatic solution lies in partial fixity. The disposition is responsible for the manifestation, and thus fixes a causal factor for some further event. By necessitating a manifestation, the disposition thus transitively still plays a causal role. Furthermore, as Megarian dispositions are fundamental powers, their manifestations entirely depend on them for their existence. This may not be a causal relation, but it certainly makes dispositions efficacious. The Megarian Actualist take dispositions to be causal powers in that they ground particular causal events. This still promises much in acting as an ontological basis for a causal account and so seems to me close enough to the spirit of dispositionalism's causal aspirations. In terms of fixing the fundamental level of the world, dispositions play an extremely important role in actively making the world the way that it is.

Additionally, there is a potential deficit with regards to laws. It can be called in to question as to whether Megarian Actualism can still account for laws as other dispositionalist accounts do. The reduction of laws to dispositions is usually couched in terms of counterfactuals, however my account denies that dispositions are characterised by counterfactuals at all (Bird 2007, 47). By divorcing dispositions from the effects laws are supposed to predict, it seems that dispositions can no longer suitably account for the laws which aim to predict these effects.

If laws describe the essences of dispositions, then while there would be physical laws such as 'charge generates a charge field in proportion to its strength', this would no longer provide laws for the kinds of causal interactions which most people are actually interested in, Coulomb's law for example. Megarian Actualism may come with its own explanatory advantages but one of the driving motivations behind dispositional essentialism is the ability to ground laws such as these, abandoning this would be a substantial deficit (Bird 2016, 7).

However, I can offer a tentative means of still accounting for laws. The reduction of laws to dispositions is usually couched in terms of counterfactuals (Bird 2007, 47). Megarian dispositions may not be counterfactuals but their relationship with them is as yet unclear. It could be the case that dispositions ground the essences of their manifestations such that counterfactuals involving manifestations and a disposition's associated effect still hold. The Megarian Actualist can then say that the counterfactuals for laws remain the same, the difference is only that the manifestation fulfils the role that the disposition once did. This means that the charge disposition grounds the essence of a charge field such that in any world

where there is a charge instance, it will manifest a charge field whose qualitative essence is such that it can produce a force with other charged instances in accordance with Coulomb's law.

Another concern lies in how fields interact with objects, taking fields to be contact causes provides a strong account for the vector model's claim that "cause and effect are co-located" (2011, 121). A disposition's causal contribution to any particular effect is the field point at the location of the causal interaction. There is an actual field which connects a distant charge with its action on another object. This goes against the scientific account of non-contact forces we are used to. On the other hand, the idea that properties somehow communicate across space without any contact, instantly producing a force in proportion to their values is on the face of it, a strange one. The Megarian Actualist account may be unfamiliar, but it provides an actual mechanism for 'non-contact' property interaction. A something through which dispositions interact.

However, this also raises the question of how precisely powers interact. They interact at objects, but what is it that is interacting? So far, I have operated as if fields interact with instantiations within objects, however if all there is to a Megarian disposition is its production of a field, then it seems that all there is for a field to interact with at another object, is that object's field at that point. If we take the field to interact with an object's token disposition itself, then this would seem to give the disposition an additional function, that of being something which can be interacted with. This would add potentiality right back into the nature of dispositions, as one of the main points of my arguments is that effects like being repelled are indeed contingent and not always actual.

Bird does make the point that it is better to view an interaction as actively caused by something else than passive caused by itself (2007, 165). And so, the Megarian Actualist could argue that it is the field which has the disposition to interact with a token disposition but the token itself is not essentially involved. However, this idea of a disposition being acted on without actively contributing anything does not sit well with the nature of powers.

An alternative analysis is to instead suggest that what a field interacts with at another object is that object's field. This is not a particularly objectionable view, there is no prima facie reason to believe that fields cannot produce effects by overlapping at an object. And as an object's field would be at a distance of zero where it is co-located with its object, its

strength would equivalent to the strength of its instantiation. There is then no functional distinction between assuming the interaction to be between an object's field at that point or the object itself.

I will not pursue this question any further here, although it is an important one for clarifying the Megarian account of causation. A more complete analysis will require further investigation into the nature of manifestations and their relations with their dispositions.

Lastly, the most significant problems with Megarian Actualism likely lie in what has yet to be developed. While I have done some work in clarifying the nature of manifestations and their relationships with dispositions there is still much more to be done. For example, at present fields are still objectionably mysterious entities. They may turn out to be events as I have assumed at present, but it is then still necessary to employ an account of events which does not irredeemably contradict the account laid out so far. Due to the scope of the project such gaping holes are inevitable. However, I believe the advantages I have outlined and the plausibility of the account as it stands, provide motivation to both further develop Megarian Actualism and work to overcome the problems it will face.

4.5) In Summary

This chapter largely follows a modal theme, beginning with the principal advantage of an easy solution to the Meinongian solution. I argue that the essential strict necessity relation between disposition and manifestation eliminates all potential relationships by insisting on only one, totally actual manifestation. I then analyse the potentiality relation between disposition and manifestation as a transitive, non-essential explanatory relationship called partial fixity whereby dispositions explain their associated effects by necessitating just one of their causal factors. I also address the three most well known criticisms of Megarian Actualism. Aristotle and Molnar's criticisms are avoided once it is recognised that the Megarian Actualist need not adopt the backwards dependency relation between disposition and manifestation which they assume. Bird's objection is avoided by demonstrating how the distinction between manifestation and effect allows the Megarian Actualist to locate necessity between disposition and manifestation, but more general modality between field and effect. I

then address further concerns relating to laws, causal efficacy, the mechanics of property interaction and the incompleteness of my account as it stands.

Conclusion

I have developed and defended a framework for a particularly strong version of Megarian Actualism on which dispositions have totally actual fields as manifestations. Megarian dispositions are always actual, modally fixed and independent properties with singular, constant, spontaneous and simple manifestations.

However, despite its novelty, much of the account is informed by modern Dispositionalism and surprisingly compatible with dispositionalist accounts, even though it rejects what is traditionally a core feature of potentiality. Mumford and Anjum provide a workable account of causation which can be supported by a Megarian ontology, and Molnar supplies the notion of contribution which is necessary to even get Megarian Actualism off the ground.

By arguing for manifestations as fields instead of complex events, I manage to apply my account to the archetypal examples of non-Megarian manifestations, charge and mass. This field view proves to make for a robust dispositionalist account which still manages to fulfil the functional roles which usually require the dispositionalist to posit infinite potential manifestations.

With this Megarian Account, I demonstrate that the Meinongian problem can be avoided by appealing to a strict necessary connection between dispositions and their manifestations, a grounding relation. I demonstrate how potentiality can be eliminated if manifestations are essentially and totally grounded in their dispositions and that the way Megarian Dispositions partially fix their associated effects by necessitating one of their causal factors can still preserve the customary explanatory power of dispositions.

I defend Megarian Actualism from the most notable arguments against it, Aristotle's, Molnar's and Bird's. I address the first two by clarifying how manifestations are dependent on their powers, and the last by demonstrating that a Megarian Actualist account need trivialise modality generally.

To accomplish this, I have had to build Megarian Actualism fast and wide. In doing so I have left substantial gaps and I imagine the largest problems for Megarian Actualism lie in the

areas I have had to set to the side. There is still substantial work to be done in areas such as clarifying the nature of Megarian manifestations, causality, modality and the nature of the relation between disposition and manifestation, but I believe I have provided good reason to think that would be worth doing and offered a framework to begin asking these questions within.

Megarian Actualism will not stay a dead position for much longer.

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