



New foundations of dispositionalism - introduction

Lorenzo Azzano¹ · Andrea Raimondi²

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1 Introduction to power metaphysics

As Price (2009) famously mused, if a philosopher were to be magically transported, perhaps through means of time travel, from the 1950s to the modern day, they would indeed be shocked by the resurgence of metaphysics in the analytic tradition. Most of all, perhaps, they would be shocked by the popularity of *power metaphysics*. What a strange item to have in a philosopher's curriculum, they might think: after all, didn't David Hume claim that "[t]here are no ideas which can occur in metaphysics more obscure and uncertain than those of power, force, energy, or necessary connection"?

Indeed, much has changed since then.¹ At the pain of using overly vague terminology, we can call "power metaphysics" the subdiscipline of metaphysics interested in the development and evaluation of a family of positions which we will refer to under the umbrella term of "dispositionalism". According to dispositionalists, the world we inhabit is also populated by genuine and irreducible powers, dispositions, and capacities of objects.² Some people are irascible, whereas sulphur matches' heads are flammable. Hydrogen peroxide has the power to oxidise other substances, whereas an electrically charged particle is disposed to undergo a force of a certain magnitude

¹ Incidentally, it's unclear whether our time-traveler would be relieved to learn that there are philosophers to take Hume's pronouncement as a metaphysical maxim; perhaps, as *per* Price's original paper, their concerns would rather be directed towards metaphysics *tout court*, but never mind that.

² As usual in the literature, for now we will use the terms "powers" and "dispositions" synonymously.

✉ Lorenzo Azzano
lorenzo.az@hotmail.it

Andrea Raimondi
andrea.raimondi@thapar.edu

¹ Department of Philosophy and Anthropology, University of Santiago de Compostela, Praza de Mazarelos s/n, 15,782, Santiago de Compostela, Spain

² School of Liberals Arts and Sciences, Thapar Institute of Engineering and Technology, Bhadson Rd., 147,004, Patiala, India

in an electric field of a certain strength; so on and so forth. It is crucial to point out that accepting the truth of the above sentences is not a sufficient condition to be a dispositionalist, viz. dispositionalism does not amount to the rejection of error-theory concerning dispositional talk. Something more is required, which is what gives dispositionalism its distinctive metaphysical bite; what that special ingredient is, depends on the position. As we will see, the dispositionalist's project can be developed in various ways, with the help of the most disparate philosophical resources. That said, a common sentiment amongst dispositionalists is that a world with powers is one whose modal features are not reduced or outsourced through a plurality of possible worlds (however understood) and whose nomic order is neither primitive nor super-imposed by laws of nature, lording over lowly matter from whichever scientific empyreum they are supposed to inhabit. How things can or would behave in certain counterfactual circumstances, or how they actually behave with a certain regularity, is ultimately and entirely by virtue of the properties they possess and the kind of powers and dispositions that these properties provide them with. In other words, to account for the nomic and modal features of reality, there is no need to postulate anything beyond the going-ons of the actual and physical world. This loose yet widely shared actualist and naturalist sensibility perhaps makes the project *prima facie* more appealing and down-to-Earth than other alternatives such as Lewis' modal realism.³

There are two components to dispositionalism, so described, with their own set of issues to resolve: an *ontological/metaphysical* component and an *explanatory* component. First, there is an ontological/metaphysical component, corresponding to the claim that dispositions constitute an ontological addition –or, perhaps even less committally, corresponding to a claim of realism concerning dispositions, according to which dispositionality is a genuine feature of reality. To explore this component of dispositionalism is to answer the question “what are powers?” by delving into the nature of powers, their internal make-up and structure, if they have one; in other words, what does the addition of powers in one's ontology ultimately amount to?

Answering the above questions requires venturing into a loosely defined intersection of various philosophical subdisciplines, from the metaphysics of properties and relations to the theory of laws of nature and causation, to the semantics and ontology of modality (to name the most prominent). Furthermore, the exploration of this first component of dispositionalism has recently turned meta, by investigating the meta-ontological backdrop underpinning the very claim of realism, and thus questioning the ambitions and boundaries of dispositionalism itself.⁴

Whereas there is much disagreement about what powers are, there is a somewhat strong agreement about what they should do in one's metaphysics. This kind of agreement is easily understood once one considers the conceptual history of dispositions in the last century. There was a tradition amongst foes of dispositions, dating back

³ For the actualist component of dispositionalism, see Eagle (2009), Contessa (2010), and Vetter (2011; 2015). The commitment to *metaphysical naturalism* –viz. roughly put the idea that only the material or the physical is real– is a bit more elusive, but equally pervasive; perhaps it emerges more naturally in contrast; see Dumsday (2015) and Giannini & Tugby (2020).

⁴ *Inter alia*: Bird (2016), Azzano (2019), Tugby (2021), Vetter (2021). More will be discussed below, when relevant.

at least to Carnap, to analyse them away with the help of conditionals.⁵ But, again, many things have changed since then: problematic counterexamples have led foes of dispositions to patch the analysis with the help of neighbouring notions, such as laws of nature and causations; furthermore, as *per* Martin (1994), the switch to subjunctive conditionals as per the Lewis-Stalnaker semantics did not really assuage these worries. All in all, these notorious difficulties lead many philosophers to suspect that dispositions ought not to be positioned at the top, but at the bottom of the explanatory hierarchy of the nomic family: contemporary dispositionalists usually agree that dispositions ought not to be paraphrased, reduced, grounded, explained, or otherwise analysed away. If anything, dispositionalism constitutes an inversion in the order of analysis of members of the nomic and modal family.

This is where the second component of dispositionalism comes into play. This is an *explanatory* component. Usually, a dispositionalist does not simply claim that certain items with a certain nature ought to be admitted in the ontology; they also claim that powers play peculiar explanatory roles. For example, powers have been used to explain laws of nature and counterfactual conditionals in various ways, and to provide a semantics and/or ontology for various kinds of modality.⁶ Similarly, to the extent that dispositionalism qualifies as a kind of non-Humeanism (in the sense that regularities in the distribution of property-tokens across space-time are not taken to be a brute fact), dispositionalists usually believe that the world exhibits a certain kind of nomic order *because* of the powers that inhabit it. Therefore, to explore this explanatory component of dispositionalism is to explore its non-Humean element.

There is much to be said about the explanatory element of dispositionalism; e.g., a prevalent kind of disposition-based non-causal explanation in recent literature is the so-called *governance*, understood as the idea that powers, or perhaps instances of powers, are ultimately responsible for the behaviour of their bearers, and therefore explain non-accidental regularities: but as we will shortly see, how exactly that happens, and in what way this explanatory notion differs from similar ones deployed by contiguous positions such as DTA, remains to be seen.⁷

More generally, powers can and have been used to account for a wide-ranging spectrum of phenomena, from hardcore metaphysics (beyond those already mentioned: the identity of properties) to philosophy in general (intentionality, mental

⁵ Carnap (1936/1937), but also Ryle (1949); similar analyses are discussed in Chisholm & McKinsey (1947) and Goodman (1947). A more recent attempt, formulated in terms of intensional conditionals and other philosophical resources, can be found in Lewis (1997). Starting from Martin (1994) and Bird (1998) conditional analyses have come under attack from the so-called “interference counterexamples”. The literature on the subject is quite massive, and its discussion is not completely relevant for our current purposes. For an up-to-date bibliography, the reader might want to consult some of the most recent attempts, as in Choi (2006; 2008; 2009), Manley & Wasserman (2008; 2011), and Contessa (2013). Lowe (2011) and Vetter (2015), building on Manley & Wasserman (2011), criticize the conditional analysis of dispositions from a different angle.

⁶ *Inter alia*: to explain laws of nature in terms of dispositions, see Mumford (2004) and Bird (2007); counterfactual conditionals in Jacobs (2010); causation in Ingthorsson (2002), Heil (2012), and Mumford & Anjum (2011); modality in Borghini & Williams (2008), Contessa (2010), Jacobs (2010), and Vetter (2015) which extends beyond natural modality to metaphysical modality.

⁷ The claim of governance is a widespread one amongst dispositionalists; to explicitly study it are e.g. Mumford (2004), Tugby (2016a) and Hildebrand (2013, 2020).

states and properties, free will, and morality, to name a few). The idea would appear to be that powers may provide a unifying *explanans* for a wide variety of phenomena, perhaps different facets of an inherently dispositional aspect of the world. Indeed, from a methodological point of view, powers being an explanatory “cornerstone” (Molnar, 2003: 186) may by itself provide further justification for believing in their existence in the first place, maybe by operating a Lewis-style cost-benefit analysis once the correspondent explanations have been provided.

As before, investigation on this second component of dispositionalism has recently been complemented by discussions on the explanatory enterprises themselves, and the character of the explanatory relations involved. Firstly, studies of both the formal and informal properties of the explanatory relations involved suggest important conditions that these explanatory projects must fulfil in order to provide successful instances of explanation, which has occasionally led to surprisingly interesting results.⁸ Secondly, meta-explanatory questions have emerged in recent literature: how, or why exactly, can powers provide the relevant explanations? For example, assuming that powers really play a governing role, can we, in turn, explain, or ground, the correspondent governance-instances, and thus the correspondent necessitation? The dispositionalist should probably answer “yes” (although what exactly this meta-explanation would consist in, remains to be seen –see below); for if the modally strong association between powers and regularities were to be primitive, and thus brute primitive necessities were to be admitted into the account, powers would turn out to be expendable middlemen of an ultimately modalist position. As forcefully argued in Barker & Smart (2012) and Barker (2013), dispositionalism suffers from the same kind of “inference problems” that plagued DTA; but within the context of dispositionalism, their resolution is that much more urgent.

With these details in mind, it is not surprising that the explorations of these two components of dispositionalism are strictly interrelated. This is for a variety of different reasons. On the one hand, answers to meta-explanatory questions (as above) may be provided by observing the nature of powers, their internal make-up or structure –which may ultimately warrant certain explanations. This is but an instance of a more general trend of providing essentialist-based answers to meta-explanatory questions; thus, whether powers can successfully pull their weight in one’s metaphysics depend on whether they can be provided with the right nature for the job. On the other hand, questions about the nature of powers cannot be answered in the abstract, given that at least part of the grip we have on them is based on the explanatory jobs they have to perform. Powers are not idle theoretical posits, but rather belong to a web of strictly interconnected notions that must be navigated very carefully if we are to advance at all.

This complex interplay between the two components of dispositionalism, and their loosely defined boundaries, makes any assessment of dispositionalism in metaphysics a rather complex diagnosis. This might be a feature rather than a bug; admittedly, many friends of powers would not be satisfied in switching to dispositional goings-on at the fundamental level of reality; they have something more radical in mind, by targeting the “passive”, “static”, and “atomized” view of the world that is

⁸ E.g. Jaag’s (2014) criticism of Bird’s (2007) variant of dispositionalism.

ultimately neo-Humean in character (e.g., Ellis 2001, Groff, 2013). Lewis (1997: 148) was perhaps not off the mark when claiming that a new reductive analysis of dispositions would be conservatively preferable to a disposition-based “new theory of everything” –an alternative project that certain contemporary dispositionalists are explicitly willing to embark on (e.g. Williams 2019). Indeed, some of the efforts in recent literature, and in this very Topical Collection, are directed at the delicate task of delineating dispositionalism as an alternative metaphysical paradigm. All in all, the situation is fascinatingly messy. Dispositionalists are not necessarily at fault here; after all, as pointed out by Groff in this Topical Collection, the original sin is perhaps that of Hume himself, in thinking “agency”, “power”, “force”, and “necessary connection” to be almost interchangeable expressions. Nevertheless, it falls on dispositionalists to bring clarity to the issue.

It is obviously impossible to resolve this set of difficulties within the context of this Topical Collection; nor is it possible to recount the history and resurgence of powers in a theoretically exhaustive manner for the benefit of our time traveller. The focus of this Topical Collection will instead be on a less abstract discussion of foundational issues of power metaphysics based on the interplay between its two components as above: discussions about what powers are vis-a-vis what they are supposed to explain. Fourteen philosophers have contributed to this project, with thirteen papers whose most general and shared goal is to discuss such foundational issues and propel power metaphysics forward as a viable alternative to neo-Humean metaphysics.

The plan for the rest of this introduction is simple. In the next section, we will introduce some of these foundational issues on the metaphysical background sketched above, for the benefit of the reader. In the third and final section, we will use the context provided so far to present the contents of the papers.

2 Foundational issues to power metaphysics

Most of those engaged in the debate agree that there is a metaphysically substantial distinction between the dispositional and the categorical: this is, first and foremost, a distinction between properties.⁹ *Dispositionalists* generally claim that at least some properties, perhaps an elite subclass of fundamental or perfectly natural properties, are dispositional, whereas *categoricalists* claim that all properties are categorical.

The reader is standardly acclimatised to the distinction in two ways; firstly, by way of examples: it is usually claimed that structural or geometrical properties are categorical, whereas properties like fragility, solubility, or irascibility are dispositional; secondly (as this is hardly illuminating), it is usually stated that categorical properties characterise their bearers as they *actually* are, rather than how they could be or would be in certain circumstances: that is the job of dispositional properties. This is also hardly illuminating. After all, as per Mumford (1998: 64) isn't this characterisation question-begging against supposedly dispositional properties? Isn't fragile, or

⁹ Although certain philosophers in the literature have espoused a neutral monist position according to which this ultimately amounted to a distinction amongst predicates (Mumford, 1998, Mellor 2000).

irascible, a way things actually are, as opposed to how they could be, or would be in certain circumstances?

Other characterisations of the dispositional/categorical distinction are available, which may help us shed some light on the nature of dispositional properties as *explanans*.

2.1 Dispositional essentialism

A traditional way to set up the distinction between dispositional and categorical properties was by way of conditional-entailment; this was a by-product of the conditional analysis of dispositions (whether it was initially meant as a distinction between dispositional and categorical predicates, as opposed to properties, is irrelevant: we can understand it metaphysically). If something is fragile, it would break if struck; if something is water-soluble, it would dissolve if immersed in water; and so on. It was famously objected in Mellor (1974) that with some ingenuity, we could attach conditionals to all properties, even the most paradigmatically categorical. After all, if something is triangular, then, would one correctly count its corners, the result would be three; a brief but intense debate quickly emerged to discuss the validity of this claim, and the resulting trivialisation of the dispositional/categorical divide by way of conditional-entailment.¹⁰

For our purposes, it is important to recall a certain kind of reaction to Mellor's treatment of triangularity: whereas both, say, fragility and triangularity entail conditionals, they do so with different strengths. This thought is first expressed in Mumford (1998: 79), who claimed that although "stronger-than-material conditionals are 'entailed' by both dispositional and categorical ascriptions", "in one case [the dispositional] the entailment is conceptual and hence logical", whereas "in the other case the entailment derives from an a posteriori discovery". Such a statement should be read within the context of Mumford's neutral monist position, as the claim that only dispositional predicates entail counterfactuals by way of conceptual necessity.

We can read this suggestion, in a more metaphysical way, if we wish; by way of a simple essence sentential operator, we could say that, e.g. it is in the nature of fragility that, if something is fragile, then it would break if struck; whereas it is not in the nature of triangularity that, if something is triangular, were its corners to be counted, the result would be three. There is more: by rejecting modalism about essence, *per* Fine (1994), we can preserve Mumford's intuition that the overall entailment is modally strong either way; the difference between dispositionality and categoricity has to be picked up through more-than-modal tools, as in Azzano (2019).

The intersection between dispositionalism and second-order essentialism is an integral component of power metaphysics, perhaps tracing back to Ellis (2001). However, whereas conditional-entailment, however reinforced, has fallen out of popularity as a way to characterise dispositions, second-order essentialism about dispositional properties is now somewhat popular, perhaps epitomised in the much discussed "dispositional essentialism" of Alexander Bird, according to which "the essence of a property can be characterised in [...] dispositional terms" (Bird, 2007a: 3). Categori-

¹⁰ Mellor (1974, 1982), Prior (1982).

cal properties, on the other hand, receive their identity in a non-dispositional fashion, perhaps qualitatively or perhaps primitively, thus equating categoricism with some version of *quidditism*. The relation between categoricism and quidditism, and the dispositional/categorical divide in general, is investigated by Lorenzo Azzano in his contribution to this Topical Collection.

In the discussion around dispositional essentialism, we can observe first-hand the interplay between the first and second component of dispositionalism. The dispositionalist claims that properties are dispositional, rather than categorical, by virtue of having a dispositional nature. But what does that mean, exactly? What can we say about the nature of dispositional properties? Moreover, how is this nature supposed to help the dispositional property accomplish its explanatory tasks? A familiar answer is provided by Bird (2007a: 43), who claims that dispositional essences can be characterised through a necessary equivalence, if not outright analysis, to counterfactual conditionals, which allows the dispositional essentialist to straightforwardly derive laws of nature from the dispositional nature of properties. However, Jaag (2014) has famously objected to this procedure, arguing that it ultimately rests on a determination circularity: if the dispositional essence of properties themselves rest on a counterfactual, how can they, in turn, ground any natural modality? Yates (2013) has alternatively provided a primitivist route for the dispositional essentialist, based on Fine's theory of essence; however, it is unclear how such a position will explain how dispositional properties explain laws of nature and other natural modalities.

Dispositional essentialists have another way to put some meat on the bones: following Mumford (2004) and Bird (2007a, 2007b), dispositional essentialists can claim that the dispositional nature of properties is relational, in the sense that it consists of second-order relations with other properties, viz. the stimulus and manifestation. Dispositional essentialism thus becomes a close cousin of the causal structuralist view on properties espoused in Shoemaker (1980), Swoyer (1982), and Hawthorne (2001). This intriguing option has gained much popularity but has also attracted several criticisms. For the purpose of this Topical Collections, two points of discussion stand out.

Firstly, Barker & Smart (2012) have observed that the idea of laws of nature being ultimately grounded in second-order relations between properties is not an original claim: it is very much the claim espoused by the DTA theory of laws. Thus, if dispositional essentialism reduces to DTA plus a claim about the nature of properties, the same explanatory challenges plaguing DTA also apply here: most famously, the "inference problem" as to how exactly that second-order relation is supposed to necessitate or explain lower-order regularities. The danger is that of a regress, in which higher-order relations are always needed to explain the connection between the supposedly nomic (or dispositional) relation and the regularity. Allegedly, the same problem now plagues dispositional essentialism. This is a serious objection: according to it, through this relational move, the dispositional essentialist may have shed some light on the ontological/metaphysical component of their position, but gravely compromised the explanatory one.

The second issue revolves around the so-called identity regress argument, first aired in Lowe (2006) and now at the centre of a growing bibliography. The idea is that once the dispositional essentialist embraces the claim that properties get their identity relationally with other properties, all it takes is for them also to embrace

“dispositional monism” –viz. the claim that all properties are dispositional– to generate a problematic situation: for either properties are finite in number, and then we have an infinite regress, or they are infinite, and then we have an infinite regress. Bird (2007a, 2007b) is, in fact, a dispositional monist, and Lowe’s (2006) intended way out was to allow for some non-power, some property whose identity is determined non-relationally, to break the regress. The identity regress may thus be understood as directed against the monist claim rather than dispositional essentialism *per se*, but its discussion can help us clarify the details of this relational understanding of dispositional essentialism –as in the case of Ralf Busse’s paper in this Topical Collection.

2.2 Directionality

The idea that there is a relational element to dispositions, which relates them to their potential stimuli and/or manifestations, is a widespread one. The word “potential” here is key since it would appear that, given the assumption that powers can be *latent*, viz. they can fail to manifest (e.g. the disposition to break if struck of a glass bottle quietly resting inside a cupboard), their stimulus and manifestations are not occurring: in that case, it would seem that the dispositional property is directed towards merely possible manifestations.

This is the *directionality* of dispositions (or directedness), a heavily discussed feature of power metaphysics but also a very mysterious one. As a matter of fact, Armstrong (1997: 69) and Molnar (2003: 60) consider directionality the mark of dispositionality. This is a familiar thought for the dispositional essentialist of the relational variety: whereas a categorical property has an entirely self-contained nature, the essence of a dispositional property points outward towards a vast array of potential behaviours. We can think of it this way: in a world of categorical properties, God could decide to alter any individual property all the while leaving all other properties intact; in a world of powers, however, altering any individual property creates a domino effect such that all other properties are also changed.

However, the problem remains as to how exactly latent dispositional properties can be directed to, and thus related with, non-existent or merely possible occurrences. This problem of a missing *relatum* has occasionally been called the “Meinongian Problem” (e.g. Armstrong 1997; *inter alia*). The worry is that by having latent dispositional properties related to their manifestations, the account might (by simple existential generalisation) quantify over entities which do not actually exist; whether the worry lies with the actuality or existence of these entities is not always clear. A more general line of thought has been provided in Tugby (2013), again focusing on the interplay between the two components of dispositionalism: the admission of these “Meinongian” entities, such as the manifestation of latent dispositions, would make powers redundant as grounds or explanans for various modalities: for a world provided with both genuine dispositional properties and non-actual or non-existent entities is a world where too many candidates compete for the same job; as such, this result conflicts with the actualist and naturalist spirit of dispositionalism.

How do dispositionalists deal with this Meinongian Problem, then? The first solution, and perhaps the simplest one, consists in rejecting the idea that directionality is a genuine phenomenon for the metaphysician to cash out; this, of course, also means

rejecting the idea that dispositional properties get their identities relationally, which may perhaps blur the distinction between dispositional properties and *quiddities*; this kind of non-relational approach can be found in Martin (1997) and Heil (2003).

Secondly, one may fall back onto the claim that directionality is not exactly a relational phenomenon, but a pseudo-relational one, something akin to a kind of physical intentionality; just as dispositional directionality, intentionality may sometimes lack an intentional object. This has been advocated in Place (1996) and Molnar (2003). On the face of it, this is a foggy position, if anything because intentionality is presumably more obscure than dispositional relationality: thus, explaining the latter with the former would be a case of *obscurum per obscurius*.¹¹

A third route is possible, which preserves the idea that dispositional properties are indeed directed to, and genuinely related with, their manifestations. When performing the move, the trick is understanding what kind of thing a power's manifestation is. Manifestations have been taken to be properties (*inter alia*, Bird 2007b), events (Armstrong et al., 1996; Molnar, 2003; McKittrick, 2010), states-of-affairs (Borghini & Williams, 2008), processes (Ellis, 2001, Handfield 2008, 2010, Marmodoro 2013), changes (Mumford & Anjum, 2011; Marmodoro, 2013), or activities (Marmodoro, 2013).

Intuitively the idea seems to be that a manifestation is some kind of occurrence, an event or something in the vicinity thereof. Nevertheless, this is not mandatory. In fact, that dispositional properties are related to their manifestations does not *per se* clarify what kind of relation is at play here. On the one hand, there seems to be a causal relation which involves a manifestation as an event, or an occurrence, *qua* effect; but this is clearly not the case for latent dispositions, in which such a causal relation does not occur. Presumably, the idea is that latent powers are still directed to their manifestations in a non-causal way, perhaps, as per dispositional essentialism, in an *identity-fixing* (Bird, 2007b) or *constitutive* way (Molnar, 2003: 60). After all, unmanifested powers are still powers *for* their characteristic manifestations, in some sense of the word "manifestation".¹²

If the directionality of latent powers is not a causal matter, we should be more at liberty to select its *relata*. Namely, we could frame the nature of manifestations in a way such that, even when a power is latent, there still is such a thing as a manifestation to which it can be related. Two options have emerged.

Option A consists in claiming that (latent) powers are directed to property-types or universals.¹³ This so-called "type-level reply" is the closest thing to a standard

¹¹ In regard to this point: many of these projects were motivated by observations put forward in Martin & Pfeifer 1986, to the conclusion that the five alleged marks of the intentional, including the potential lack of intentional object, also characterize physical directionality; but, as pointed out in Mumford 1999 supporters of directionality-as-intentionality completely misrepresented the dialectic of the situation: Martin & Pfeifer's original point was not that intentionality indeed was the mark of the dispositional, but that these alleged criteria actually failed to uniquely characterize the mental phenomenon of intentionality: in this context, the intentional nature of the physical was the last step of a *reductio*.

¹² See Engelhard (2010) for an explicit distinction between these two distinct relational elements, one causal and one non-causal, of dispositional directionality.

¹³ Ellis (2001: 132–135), Mumford (2004), Bird (2007a: 104–108), and Handfield (2008); Mumford (2004) offers independent motivation in favor of the view; Tugby (2013) argues for the even stronger claims that powers are directed to Platonic universals.

reply to the Meinongian Problem that exists in the literature, but as argued by Ashley Coates in his contribution to this Topical Collection, it is far from unproblematic.

Option B, first suggested in Bird (2007a), consists in claiming that powers are directed to contingently non-concrete entities, as *per* Linsky & Zalta (1994) or Williamson (1998). This option has so far not received the level of scrutiny it deserves but is now examined and defended by Giacomo Giannini in the pages of this Topical Collection; we will say more on this option when discussing the contents of Giannini's paper.

Finally, there is a fourth solution to the Meinongian Problem, which consists in rejecting another, perhaps less visible, premise: that powers can be latent in the first place. In other words, as long as they are manifested, powers are always manifesting themselves. Of course dispositional properties can be related in a causal way to manifestations-events (in fact, they constantly are), but no mysterious notion of directionality needs to be spelled out beyond that. This may *prima facie* seem like a non-starter; after all, as in Molnar's (2003) reconstruction of the Aristotelian arguments against the so-called Megaric School (which, allegedly, claimed that potency only exists in act), it would seem that the endorsement of dispositionalism is inexorably intertwined with the endorsement of a dimension of latency, for lack of a better word, according to which things have the potential to behave in such-and-such a manner even if they are not actually behaving in such-and-such a manner: the entire project of grounding modalities on powers indeed seems to be predicated on the fact that no such collapse occurs between act and potency.

Nevertheless, things may not be that simple. The ease with which this Megarian Actualism (*viz.* the rejection of latent powers) deals with the Meinongian Problem is not the only thing in its favour. As a matter of fact, as argued in Esfeld and Saasche (2011: 38), a closer look at certain dispositions investigated by scientists may lead us in the same direction. For one, dispositionalists like to characterise electric charge as the disposition to attract or repel other charged particles at a certain distance with a force whose magnitude is given by Coulomb's Law. But that is not exactly correct: it is not like a charged particle is standing idly by until another one is put at a certain distance; perhaps more appropriately, we could conceive electric charge as the continuously and spontaneously manifested disposition to induce an electromagnetic field. Cases such as these generalise; for one, Bhaskar (1975) and Mumford & Anjum (2011) argue that several apparent cases of latency are actually cases in which the powers of an object are activated and constantly manifesting to bring about a state of equilibrium. When properly understood, the viability of Megarian Actualism will be investigated by Toby Friend in his contribution to this Topical Collection –and shown to be a more deserving account than traditionally thought.

Further testimony of the fuzzy boundaries of dispositionalism is another, perhaps even more radical solution to the Meinongian Problem, based on the idea that directionality should be understood, rather than a static relation between two entities, as the quintessentially dynamic activity of powers. The view has been marshalled on different fronts by Marmodoro (2010; 2013; 2014), Groff (2013), Mumford & Anjum (2018) and further engaged with, in this volume, by Groff, Austin and Rovelli, and Engelhart. Drawing from the Aristotelian conception of dispositions as *dunamis*, those who advocate for this view are generally dissatisfied with the aforementioned

static picture of the world that is associated with neo-Humean metaphysics: on the contrary, they believe that we should not reify the directionality of powers by assuming that it is a matter of there being a relation between the power and its manifestation. The manifestation of a power is not a further thing from the power itself; it is instead what the power does, an activity between two or more interacting particulars (see also Ingthorsson 2021). This radical party has a somewhat simple response to the Meinongian Problem: the power is not directed at anything because the manifestation is not numerically distinct from the power itself.

2.3 Flip the table (1): powerful qualities

Most if not all of the positions presented so far are based on two background assumptions: the first is that dispositionalism presents itself as an ontology of properties; and the second is that these are dispositional properties, as opposed to categorical or qualitative properties. These assumptions are often implicit, but for the purpose of delineating a more complete logical space, we may ask what would happen if we rejected either of them. In other words, could a dispositionalist flip the table and claim that there are no dispositional *properties*? Or could they claim that such dispositional properties are *categorical* as well? Why would they operate such a manoeuvre, and what would the resulting account look like?

We will investigate both scenarios, starting from the second one. In this case, the background assumption under scrutiny is the one according to which the dispositional/categorical distinction between properties is mutually exclusive. This is a standard assumption (e.g. Mumford 1998, Bird, 2007a), but considering some of the ways the metaphysics of dispositions has recently evolved (as previously detailed), it may not be so harmless.

Dispositionalists call dispositional properties, which are not categorical “pure powers”. Instead, they have exhaustively relational essences linking them with their stimuli and/or manifestations: all they are, are powers *for* certain outcomes. In other words, their nature is entirely exhausted by the relations they have with other properties; whichever non-relational or qualitative content exists to the world, therefore, is due to other, non-dispositional properties. In combination with dispositional monism, this turns into the claim that all that there is to the properties ultimately reduces to relations to other properties. This may be problematic in a number of ways. One of them is Lowe’s identity regress, which we have already seen above; but there are other related concerns: first of all, there is an epistemological regress (Swinburne 1980), based on the idea that, since we access powers through their manifestations, in a world of pure powers “the epistemic buck is continually passed” (Tugby, 2014: 2) without any knowledge of properties ever being achieved. Other, more metaphysically driven regress arguments against pure powers have been proven to be quite challenging to be clearly expressed but have quite a draw in the literature: according to them, a world of pure powers would be “too fugitive” or “ontologically manque” (Molnar, 2003: 176), in the sense of lacking being, reality, or perhaps determination (Campbell, 1976: 93, Robinson 1982: 114–115, and Heil 2003: 98–108).

What is a dispositionalist to do then? Firstly, they can take the bull by the horns and try to answer these charges. Secondly, they can abandon dispositional monism

and embrace a kind of property dualism in which both dispositional and non-dispositional properties contribute to making up the features of the world (as per Ellis 2001, Molnar, 2003). Thirdly, and more importantly for our present purposes, they can reject pure powers, viz. reject the premise that dispositional and categorical or qualitative properties are two distinct kinds of properties: there is only one kind of properties, *powerful qualities*. For all intents and purposes, powerful qualities are meant to be genuine powers, they are causally active and modally-laden as powers should be; but they are not qualitatively void properties, fully exhausted by relations. Let us call this family of positions “the Powerful Qualities view” (or “Mixed view”). The Powerful Qualities view is, in a way, similar to property dualism: in both cases, categoricity is added to the world to solve the problems of pure powers; but in the former case, it is added internally to dispositional properties, whereas in the latter case it is added externally, as a distinct kind of properties.

Avoiding the various regresses concerning pure powers is not the only reason to pursue the Powerful Qualities view: for one, a qualitative aspect to properties may stop the explanatory regress from Barker & Smart (2012): for the Powerful Qualities view, the answer may lie in the qualitative aspect of properties. This is the case in Tugby’s (2012) so-called *qualitative dispositional essentialism*.

The Powerful Qualities view has its fair share of supporters.¹⁴ Nevertheless, the more established variant of the position is the so-called Identity Theory, due to the work of Charles Martin and John Heil. The Identity Theory posits an identity between the dispositional and the categorical in a very strong sense: not simply in the sense that each dispositional property is identical to a categorical one and vice versa; but in the sense that within each property, the dispositional and the categorical are one and the same. Powerful qualities are meant to be simple properties without different aspects or components; and neither is the categorical meant to explain, or reduce, the dispositional, as in earlier kinds of identity-involving accounts of dispositional and categorical properties (e.g. Armstrong 1969). In Heil’s (2003: 111) most precise characterisation:

If P is an intrinsic property of a concrete object, P is simultaneously dispositional and qualitative; P’s dispositionality and qualitativity are not aspects or properties of P; P’s dispositionality, Pd, is P’s qualitativity, Pq, and each of these is P: Pd=Pq=P.

It is notoriously difficult to make sense of the very strong identity the view poses (for one of the most recent attempts, see Giannotti 2019). Of course, an identity as strong as Heil intended may or may not be tenable, but for our purpose, there are other points of interest concerning the Powerful Qualities view, more generally understood: given that the usual characterisations of dispositionality and categoricity are mutually exclusive, supporters of the Powerful Qualities view must shop for new ones, or appropriately tweak the old ones. Thus, rather than merely being a fringe

¹⁴ Besides those already mentioned, Martin (1997, 2007), Martin & Heil (1999), Heil (2003, 2012), Strawson (2008), Schroer (2010; 2013), Jacobs (2011), Ingthorsson (2013), Taylor (2013; 2018), Williams (2019), and Giannotti (2021).

case within the landscape of dispositionalism, the Powerful Qualities view offers an excellent opportunity to investigate the ontological/metaphysical component of dispositionalism at large –as attempted by Vassilis Livanios and Lorenzo Azzano in this Topical Collection.

For one, supporters of the powerful qualities like to shift away from directionality-based or, more generally, relational understanding of dispositionality: “dispositionality is not a relation between what is dispositional and what is its manifestation” (Martin, 1997: 216). On the one hand, Heil’s identity between the dispositional and the property itself would make that impossible, since the dispositional property itself is usually not meant to be a relation (e.g. fragility is a monadic property); on the other hand, even without specifically discussing the Identity Theory, the idea is that a powerful quality has a qualitative or otherwise non-relational nature. Whence its dispositionality, then? Furthermore: what does it mean that the property is qualitative?

Here is where we encounter a real challenge for the supporters of the Powerful Qualities view. The supporters of the Powerful Qualities view may be tempted to characterise the powerfulness or qualitativity of their properties in a metaphysically less demanding fashion as to allow for a property to be both; e.g. they may claim that properties are qualitative to the extent that they are genuine and real features of the object, or that they are dispositional to the extent that they contribute to the causal or nomic profile of the object. That may very well be a consistent characterisation, but would make the Powerful Qualities view an almost trivial position, and undoubtedly one not clearly distinguished from its pure powers adversary –as provocatively argued in Taylor’s (2018) “collapse argument”.

There are various ways to remedy this difficulty. One which has gained some popularity in recent times has been independently argued (with some differences) in Coates (2020) and Azzano (this Topical Collection), according to which powerful qualities are qualitative to the extent that they display a certain kind of non-relational, qualitative or primitive nature (perhaps, but not necessarily, in the form of a quiddity), but are dispositional to the extent that they are uniquely responsible for the object’s dispositional and nomic profile. Characterisations such as these are part of a broader trend, so-called “grounding theories of powers” (Tugby, 2021; Kimpton-Nye, 2021), in which the dispositionality of properties has more to do with their grounding or explanatory roles within the nomic family than whichever kind of essence they might display. Some of them might even go as far as to explicitly eliminate the essentialist component of dispositionalism in its entirety, as attempted by Matthew Tugby in this volume. But, on the other hand, we might leave it open to the possibility that the possession of a certain powerful quality explains why a certain object has a certain nomic profile by virtue of certain features of the powerful quality’s nature –although which features these are, and how is the explanation to be articulated, remains to be seen.

2.4 Flip the table (2): nominalism

Until now, we have laboured under the assumption that dispositions are properties. Thus, the efforts to characterise the metaphysical import of dispositionalism ultimately amount to an effort to delineate an ontology of properties. This was more often than not a standard assumption, perhaps corroborated by the fact that dispositions are

usually (although not exclusively) expressed in a predicative position; as Borghini (2016) notices, the most straightforward answer to what are powers is that powers are properties. Realism about powers and realism about properties indeed seem to go hand in hand, although opinions vary about what kind of properties powers are.

Therefore, for a long time, the intersection of dispositionalism and nominalism was unexplored territory. The claim that talk of dispositional properties could very well be reframed in nominalistically-accepted terms remained, when present at all, in a programmatic stage (e.g. Mellor 1974: 157). Perhaps the only effort in that direction was Whittle (2009), which, however, seemed more interested in reducing dispositional truths to counterfactual truths, something more in line with a metaphysics of brute subjunctive facts as in Lange (2009) than with dispositionalism, nominalistic or otherwise. Recently, however, new efforts have been directed to the exploration of a nominalistically-acceptable brand of dispositionalism.

One may think that a nominalistically-accepted brand of dispositionalism provides a significant deflation of the ontological costs of the position, but how exactly deflationary the account can vary greatly. We can recognise at least three degrees of deflation. On the first degree, a position may claim that dispositions are properties *qua* entities, but in a somewhat deflated sense, e.g. set-theoretical; this is permitted in McKittrick's (2018) "disjunctive agnosticism", a peculiarly abundantist take on dispositional properties, in a landscape otherwise dominated by positions in which dispositional properties constitute an elite of natural/fundamental universals or tropes. On the second degree, dispositions are not properties, but rather entities of some other kind, perhaps a *sui generis* kind; as far as we know, this position has never been explicitly defended, but has been partially recognised in Tugby (2020). Finally, on the third degree, there are no dispositions *qua* entities at all, the most radical sense in which a version of dispositionalism may be nominalist.

The reader might legitimately wonder what is left of the dispositionalist position if there are no such things as dispositions at all; the most general answer is that there still is a more-than-modal dimension that might differentiate this position from neo-Humean metaphysics, to be cashed out either as an *explanatory* dimension, or *essentialist* dimension. According to the explanatory variant of a nominalistically-acceptable brand of dispositionalism (as in Vetter 2021), although dispositional ascriptions are not underpinned by dispositional properties in any sense, they are still metaphysically relevant in the sense that they occupy a privileged position in the explanatory structure of the nomic and modal family; furthermore, as per the so-called Argument from Science, at least some of them cannot be explained away through talk of microstructural states. Crucially, talk of non-causal or metaphysical explanation is compatible with the kind of deflation we are looking for (e.g. if the relevant kinds of explanations are understood in an operationalist spirit).

Secondly, we can find an essence-based nominalistically-acceptable brand of dispositionalism in the so-called "austere dispositionalism essentialism" defended by Lisa Vogt in her contribution to this Topical Collection. More details will be provided in the next section; for now, it is worth pointing out that the kind of nominalism Vogt is thinking about is sometimes called Ostrich Nominalism, viz. the claim that predicative truths are ultimately fundamental. It is thus compatible with the third degree of deflation, in which there are no dispositions *qua* entities at all.

3 The papers

It is finally time to present the contents of the papers in the Topical Collection. As we have seen, the dispositional/categorical distinction is of foundational importance for the viability of power metaphysics as a whole. In his paper *Dispositional, Categorical, and where to find them*, Lorenzo Azzano argues that until now, it has proven surprisingly difficult to provide materially adequate characterisations and, consequently, to find instances of non-merely-verbal disagreement amongst friends and foes of dispositions. This corroborates earlier results such as Taylor's (2018) "collapse argument"; for Azzano, a two-fold criterion of adequacy for characterisations of dispositionality and categoricity is constituted by *comprehensiveness* and *adequacy*. A viable characterisation of dispositionality ought to be comprehensive in the sense that it must apply to properties posited by dispositionalists and mixed views alike, such as the Powerful Qualities view; but it also ought to be divisive in the sense that it must not apply to the properties of the categoricalists as well. And something similar holds for categoricity.

Unfortunately, this is where things get tricky. Most of the characterisations offered by the supporter of the Powerful Qualities view (PQers), such as the association between categoricity with *actuality*, and dispositionality with *potency*, can be shown to be non-divisive. In contrast, the modal or identity-based characterisations employed by supporters of the Pure Powers view (PPers) are both non-comprehensive and non-divisive. All in all, such characterisations fail to correctly carve at the joints of the debate. Azzano's prescription, rather has a disjunctive flavour: to separate a qualitative Identity-based (QI) characterisation of categoricity from that of dispositionality. Dispositionality should rather be understood as Exclusive Contribution (EC), according to which a property is dispositional if it is solely in virtue of possessing that property that its bearer is assigned a certain dispositional profile. Azzano argues that (QI) and (EC) are just right in that they satisfy both Comprehensiveness and Divisiveness, thus positioning Azzano's paper within the landscape of grounding-based (Tugby 2020) or explanation-based (Vetter, 2021) characterisations of dispositionality.

If Azzano is right and the notion of dispositionality must be understood as Exclusive Contribution (EC), the dispositionalist is free to dispense with essence as constitutive of the notion. Matthew Tugby's contribution *Dispositional Realism without Dispositional Essentialism* echoes a similar sentiment. Tugby rejects the link between dispositionality and essence, offering a novel argument supporting the grounding theory of powers. Tugby thinks that by rejecting the link, realists about powers have a handy response to a popular conceivability objection against dispositional monism. Notoriously, the objection trades on the conceivability-possibility link and takes the conceivability of a situation where properties fail to confer certain dispositions as constituting enough evidence that there are no necessary connections between a property and its dispositions. The dispositional monist thinks they can avoid the conclusion by redescribing the conceived scenario in less problematic terms (see also Shoemaker 1998; Mumford 2010; Heil 2010). Tugby submits that, in some cases, the redescription strategy cannot be deployed so swiftly. He presents an unusual case without intrinsic interferences, where it is difficult for the dispositional monist to explain what it is that the conceiver has done wrong. Tugby, instead, thinks

that the best strategy is to acknowledge that such cases are positively conceivable and yet deny the link between conceivability and metaphysical possibility. He urges us to consider the grounding theory of powers, according to which natural properties have non-modal qualitative essence and they (fully or partially) ground powers. As mentioned above, the grounding theorist maintains that dispositions are not part of the essence of properties; as Tugby puts it, “if properties like sphericity do not have a dispositional essence, then grounding theorists can agree with our assessment that we can genuinely conceive of situation in which the relevant properties are present but the dispositions in question are absent”. Conceivability cases are thus positively conceivable but, ultimately, metaphysically impossible. The result is significant for anyone taking the conceivability objection as a real threat to the dispositionalist project within the boundaries of monism.

Vassilis Livanios continues his examination of the promise of the Identity Theory (2020), and in his *Challenging the Identity Theory of Properties* he further explores its perils. Livanios concedes that the Powerful Qualities view represents an interesting middle ground; still, he raises doubts about the Identity-Theory (IT) providing an intelligible distinction between dispositionality and categoricity in the first place. Three distinct aspects of (IT) preoccupies Livanios: their definition of qualitativity, the distinction between qualitativity and categoricity, and the understanding of the identity between the property, its qualitativity, and its dispositionality. Assuming that the task is to offer a non-deflationary “ontological basis for the conceptual distinction between dispositional and qualitative ways of describing the properties”, all the definitions of qualitativity he examines are found wanting: they are incompatible and not on a par with the dispositional ones. These concerns spill out to the link between qualitativity and categoricity. Livanios argues that (IT)ers’ association between the qualitative and the categorical makes all properties trivially categorical, with the unwelcome consequence of trivialising the traditional debate between categoricists and supporters of pure powers. Nevertheless, the most pressing issue is the central tenet of the view, viz. the identity claim, whose various interpretations are all found deficient. Ultimately, Livanios argues that there is an explanatory gap at the very heart of (IT) because the question of “what is it about properties *in particular* that explains the fact that we can consider them in different ways” is always left unanswered. Unless the Identity Theory closes this gap, it is hard to believe it can deliver any intelligible distinction between dispositionality and categoricity.

Another commonly discussed mark of dispositionality is directionality. Nevertheless, cashing out directionality as a genuine relation is not a path devoid of obstacles, the Meinongian Problem being the main one. In his *Unmanifested Powers and Universals*, Ashley Coates questions whether the so-called type-level reply is a cure-all against the objection. Coates illustrates that under that name hides an entire family of different positions, whose fate is much uncertain. Firstly, the existence approach, according to which token-powers are directed toward manifestation-types. Secondly, the type-grounding approach, where token-token directness is grounded at the type-level. Finally, the token grounding approach, according to which token powers are directed at their token manifestations but also at their manifestation types. Unfortunately, they all suffer from a fatal flaw (exemplified in the paradigmatic case of charge as a power to behave according to Coulomb’s Law): type-level facts lack the

right kind of structure necessary to ground lower-level facts. In particular, they do not mention objects, and so cannot sanction that, say, the objects amongst which the force is exerted are the same as those having a certain charge and being at a certain distance. This problem can be appropriately adjusted for all variants of the type-level reply in Coates' taxonomy, such as the token-grounding and the existence approach, but it is just as virulent. *Prima facie*, such a difficulty could be avoided by finding a way to encode first-order structure in the universals themselves; this could be achieved through Armstrong's (1997) view of universals as states-of-affairs types. As a matter of fact, this strategy would seem to successfully recapture the idea that a second-order relation between universals already determines which lower-order particulars possess which properties or stand in which relations. Yet Coates' diagnosis of this way out of the tangle is ultimately negative: in fact, it involves a vicious grounding circularity. Coates concludes that if every type-level response fails, realism about universals alone does not have the resources for accommodating unmanifested powers. Nevertheless, he argues, this failure could be interpreted as the need to move away from dispositional essentialism. Coates adumbrates the hypothesis that endorsing the thesis that properties are purely qualitative but dispositions-grounding could resolve the directness problem that does not invoke type-level responses, while simultaneously avoiding unlovely commitments.

In his paper *New Powers for Dispositionalism*, Giacomo Giannini agrees with Coates that type-level responses are wanting. He has other reasons: he believes that the Actualisation route is open to a generalised version of Leech's argument (2017), which can be avoided only by admitting Platonic primitive haecceistic universals. Giannini thinks this is too much of a cost for dispositionalists. But, crucially, Giannini disagrees with Coates to the extent that he rejects the idea that if every type-level response fails, we have no other way to avoid the Meinongian problem. As we have seen, there could be other ways to claim that if a power is unmanifested, there still is something for the power to be directed to. Following Bird (2007), Giannini takes unmanifested manifestations to be mere logical existents, akin to Williamson (1998). Nevertheless, Giannini argues that, as is, Williamson's characterisations of "mere logical existents" (MLE) as either lacking contingent space-time location or exclusively having modal properties, do not comfortably combine with powers ontologies; for Giannini the source of the problem is that (MLE) are characterised in modal terms in a context where modality is the *explanandum*. He thinks we can make progress by reformulating (MLE) non-modally by appealing to non-modalist essence in the following way: something is an (MLE) if it is not located, but it is not part of its nature that this is the case. Giannini argues that this strategy does more than offer a solution to the tension above and opens up a new metaphysical framework for powers, within which we can also define what it is to be a manifested manifestation – i.e. the acquisition of a spatiotemporal location.

Interestingly enough, Giannini evaluates a "no buyers" objection which echoes some of the aforementioned worries concerning the Meinongian solution and its resolution: is not a world with genuine powers, logical existents, and primitive essences too overcrowded, at least vis-à-vis the grounding of modalities? More generally, is not a metaphysics of logical existents a concession, as opposed to a solution, to the Meinongian Problem? The way we see it, to evaluate the truth behind these accusa-

tions, one must understand what is wrong with the supposedly “Meinongian manifestations” we are threatened with and check whether Giannini’s route replicates this error –an open issue for the reader to explore throughout the papers.

Whereas Giannini thinks we can fix the directional nature of powers by tapping into new ontological resources, Engelhard and Friend adopt a substantially revisionary approach to the problem by re-examining some underlying assumptions. Eventually, both offer two novel formulations of dispositionalism –respectively, the DM Identity Theory and Megarian Variable Actualism– reaching well beyond the resolution of the problem at hand.

In her paper *Dispositions manifest themselves: an identity theory of properties*, Kristina Engelhard submits that we have reasons to abandon the deep-rooted idea that a power is directed to its manifestation as something numerically distinct from it. The rejection of this so-called “Separation Thesis” allows one to bypass most problems arising from a relational understanding of dispositionality, from the problematic regresses of identity-fixing to Barker & Smart’s “inference problem” (not to mention, of course, the Meinongian Problem itself). What is more, rejecting the Separation Thesis paves the way for another attractive form of dispositionalism: the DM Identity Theory (DMI). There are precursors to this view in Marmodoro’s Aristotelian powers (2010, 2014). A power’s manifestation is the transition between two states of a single entity, active and inactive. Following Marmodoro, Engelhard claims that we should capture the internal complexity of powers in terms of their modes of manifestation: she argues that we can understand their mode of manifestation in terms of dispositions and manifestations being partially identical (in the Armstrongian sense).

DMI has consequences for understanding dispositions ontologically and the grounding of natural modality. DMI shares with the standard Identity Theory the view that properties have qualitative and dispositional features. Yet, in contrast to the former, it takes qualitativity not as a subset feature but as the property simpliciter. Moreover, it takes dispositionality as exemplifiable in two modes or ways of being (Armstrong, 1997): latent and manifest. Hence, partial identity means that concerning their qualitative features, the disposition and the manifestation are strictly identical, but concerning their mode of instantiation, they do not overlap. When a property is instantiated manifestly, the manifestation is “a force exerted on something resulting in some behaviour”. When a property is instantiated latently, it is simply doing no work, “[i]t sits there with its particular or at its space-time region”. Manifestation is thus the acquisition of a new property. But because manifestation is equated with the property of ‘being in a manifest state’, differently from the standard view, manifestation is a second-order, not a first-order property. Finally, Engelhard proposes that DMI can ground natural modality in the invariances that characterise natural necessity in the laws of nature (Corry, 2019; Hüttemann 2021). The outcome is what she dubs “qualitative natural modality”, which is the consequence of the identity between dispositions and manifestations. As she puts it, “because it is the very same quality which manifests itself, a dispositional property’s contribution is invariant under all conditions”. When conditions are given, a latent disposition makes a specific behaviour necessary.

If Engelhard follows the Aristotelian roots of dispositionalism, Toby Friend’s paper *Megarian Variable Actualism* goes in a completely different direction. He claims,

contra Aristotle, that we have good reason to adopt the view that particulars must always manifest their powers, as per the so-called “Megarian Actualism”. As we have seen in this framework, the Meinongian Problem does not even arise. Friend argues that a particular class of powers which figure in quantitative lawlike equations are best understood as Megarian: within these formulas –e.g. $Q = cm(\Delta T)$ – directness holds between a “power variable” (concerning the disposition conferred on a particular by, say, its specific heat capacity c) and its manifestation variable (e.g. the temperature change). Although both variables are quantities with only one value at a time, they are quantitative multi-track (QMT). The power variable is, in fact, directed to all possible (quantitative) values of the manifestation variable. Friend argues that “[s]ince all possible values of the manifestation variable count as genuine manifestations, and since the determinate instances of these power variables cannot fail to be exhibiting some or other value of their manifestation variables, they will therefore always be manifesting”. Hence, the Megarian outcome. As Friend himself admits, there are many known objections to the Megarian proposal (Molnar, 2003; Bird 2007; *inter alia*). Friend argues that such objections rest on assumptions concerning Megarian powers, which do not apply in the quantitative cases seen in this paper. Nevertheless, the concerns remain that the current view has failed to take account of the pre-theoretical data that powers such as fragility, and solubility, sometimes fail to manifest. Megarian Actualists must claim that, among the instances of (supposedly) unmanifesting powers, we shall include zero-value cases as genuine cases of manifestations (see Balashov 2009). In the final section, Friend extends his account beyond QMT, generalising to the claim that “all powers must always be directed at the values of manifestation variables”. This is the *Megarian Variable Actualism* (MVA) thesis proper. Overall, Friend presents a novel and radical account of powers with its independent appeal and strengths.

As Engelhard previously pointed out, the issue of directness is only one of the few structuralist issues vexing dispositionalism. In *Asymmetry Cannot Solve the Circularity/Regress Problem of Property Structuralism*, Busse offers a lengthy and meticulous examination of the identity-fixing circularity/regress objections (CRO), arguing that Bird’s (2007) structuralist side-step (according to which powers get their identity by their position in an asymmetric structure) is unsatisfactory. More precisely, Busse follows the ilk of Lowe (2010), Jacobs (2011), and Ingthorsson (2015) in claiming that CRO, as it currently stands, is too coarsely characterised to be properly resolved, and, most importantly, does not distinguish between relational identity, individuation, and non-relational identity as essence (in a loosely Finean sense). Through a careful model-theoretic reconstruction of the relevant claims, the paper shows that Bird’s structuralism is insufficient to answer CRO. To be sure, the appeal to asymmetry does achieve something; firstly, that facts of (relational) identity indeed supervene from the structure’s relational pattern, and secondly, that each object is assigned a unique position within a structure without non-trivial automorphisms. But all of this is too weak a conclusion to entail that objects are indeed individuated or have their essence determined structurally in the way envisioned by Bird. What *could* provide a way out of CRO, Busse argues, is a detailed metaphysics of relata-free structures that grounds the manifold of essentially related properties. Unfortunately, there are severe obstacles to the development of such structuralist metaphysics: according to

the standard view, plausibly equated by Busse with metaphysical foundationalism, the resulting account would suffer from the problems already highlighted by Barker (2013), Barker & Smart (2012), and Jaag (2014) and from the fact that potencies will turn out to be non-fundamental. If, on the other hand, one adopts a coherentist variant, which in principle embraces the circularity issues raised by CRO, one is left with the task of providing a first-order account of symmetric metaphysical structure. Such a task, Busse concludes, has yet to be undertaken.

Many of the contributions presented so far tend to square the notion of powers with the notion of essence and metaphysical necessitation. In her paper *Conceptualizing causal powers: activity, capacity, essence, necessitation*, Ruth Groff points out that this is only a partial reconstruction of the dispositional landscape. Dispositionalists often bring forward different claims about the nature of powers and the metaphysical work they perform. Groff argues it is more appropriate to talk of different powers ontologies or families of powers theorists, each promoting radically different conceptions of a world with powers. These are, in turn, rooted in four distinct concepts –activity, capacity, essence, and necessitation– which must be kept separate. Groff’s wide-ranging taxonomy is a perfect encapsulation of the fuzzy boundaries of dispositionalism but also of its potential as revolutionary metaphysics. Fascinatingly enough, Groff argues that although the notion of power is not entirely univocal, it is not equivocal either: there are interesting relations between the different senses; and amongst them, she emphasises the notion of activity or dynamicity: the cornerstone of power metaphysics, so understood, is the denial of the neo-Humean commitment to passivism, the idea that the world lacks inherent dynamism and is somehow activated from the outside (Ellis, 2001; Groff, 2013). Groff argues that understanding powers in terms of essence does very little to move dispositionalism far from this idea. Likewise, those who square powers in terms of metaphysical necessitation are almost exclusively interested in the existence (or lack thereof) of necessary connections between distinct existences. That is obviously enough to set a dispositionalist apart from a neo-Humean but not enough to capture the salient aspects that connect powers with questions of activity and dynamism. The conception of powers linked to necessitation is somehow orthogonal to those embracing activity (Harré & Madden, 1975; Mumford, 2004; *inter alia*) and those embracing essence (Bird 2007; *inter alia*). A similar fate awaits those who latch the notion of powers with the idea of capacity, which has to do primarily with the distinction between actual and potential and thus to the concept of potentiality (Vetter, 2015). This family of power theorists is hence not concerned with questions of dynamism but with the (dispositional) ontological ground of real, metaphysical possibility. In the end, the family that emerges victorious, united under the motto “no potential for activity, no powers”, is the one subscribing to the view that causal powers are understood *via* the phenomenon of activity (Ellis, 2001; Mumford & Anjum, 2011; Harré & Madden, 1975; Groff, 2013; *inter alia*). Groff does not deny that other concepts play a role in developing a power ontology; nevertheless, she claims that the concept of activity must be taken as the primitive anchor concept upon which rests any characterisation of powers.

Christopher Austin and Andrea Roselli further explore the notion of dynamic powers in their paper *The Dynamical Essence of Powers*. Their goal is to establish a meaningful connection between the idea of dynamicity and that of essence. They do

so by exploring the correlation between the identity of a power and the set of conditionals where various stimulus values are correlated with multiple manifestation values. Why does this set of discrete and disjoint causal roles follow from the same singular essence? Austin and Roselli argue that this unity problem generated by the causal complexity of powers is not a mere artefact of descriptive convenience (see Vetter 2013), but it is genuinely ontological. Therefore, it is on this ground that must be addressed. Unfortunately, their verdict is that none of the accounts on the market is capable of doing so. All the strategies are found wanting because they do not derive unity from what the authors call “the powerfulness of powers”. According to Austin and Rovelli, the powerfulness of powers is the fact that powers have a *dynamic essence*. According to their “dynamical operator account”, the essence of powers is the way the power performs the functional activity of mapping inputs (stimulus factors) and outputs (manifestation states). As they put it, “the essence of a power [lies not] in *what that power can do*, but rather in *how that power does what it can do*.” On this account, the unity of power’s effects is a product of how the effects are generated, which is, in turn, an intrinsic activity. Thus, appeal to manifestations can, at best, play a valuable heuristic role because, technically, on this account, powers’ manifestations do not fix their identity conditions. This shift in understanding essence in dynamic terms has another important implication for the debate on dispositional directedness: because manifestations do not represent powers’ essence, there is no robust sense in which powers are directed toward their manifestations. Directedness should rather be understood as a part of a metaphysically innocuous conceptualisations, rather than as a genuine feature of powers.

Whether the issue at stake is directionality or the dispositional/categorical distinction, virtually every dispositionalist endorses some form of realism about properties. Lisa Vogt’s *Austere Nominalist Dispositional Essentialism* challenges this orthodoxy by presenting a novel (austere) nominalist version of dispositional essentialism (ADE). According to Vogt, dispositional essentialism can be characterised by two central claims: the essentialist claim and the explanatory claim. According to the former, some fundamental properties are properties with dispositional essence. According to the latter, powers must explain natural modalities. Vogt develops a full-fledged nominalist account meant to preserve the usual explanatory hierarchy while discharging the property-realist component of the position. This is a complicated task, as the account must discharge all dispositions *qua* entities of any kind. This is so, Vogt argues, because any metaphysically lightweight proxy for properties (e.g. set-theoretical) would fail to have the right kind of essences. The account preferred by Vogt is one in which simple predicative truths (and amongst them, dispositional predications) are fundamental, which may thus qualify as a variant of the so-called Ostrich Nominalism. Then, of course, we must understand how to reframe dispositional essentialism without any entity to have such and such an essence. This is achieved by operating the crucial switch from *objectual* to *generic essences* (as per Correia 2006); generic essence operators take predicates instead of singular terms as their subscripts, and their interpretation does not revolve around the essence of entities of any kind (be they individual objects, properties, kinds, or what have you); instead, it revolves around what certain ways for things to be are essentially like. Over this background, the explanatory component of ADE is very simple to extract:

all it takes is to substitute objectual essence with generic essence in the standard explanatory claims of the dispositionalist; e.g., that being electrically charged essentially involves (generic essence) that the object behaves in such-and-such a manner explains why electrically charged objects behave in such-and-such a manner.

Crucially, Vogt's account enjoys some virtues over previous attempts at a nominalistically-acceptable brand of dispositionalism, such as Whittle's (2009) so-called "Causal Nominalism", which grounds predicative truths in truths regarding counterfactual roles, some of which are fundamental. Vogt's brand of nominalism is unaffected by Tugby's two-horns dilemma (2016b) against Whittle's position: this is because while for Whittle, counterfactual truths are considered fundamental, according to her proposal, counterfactuals are explained by essential truths. Thus, Vogt's ADE counts as a proper nominalistic variant of dispositional essentialism.

Whilst much of the contributions of this Topical Collection explore the foundational issues of powers metaphysics, Neil Williams invites us to adopt a broader perspective, highlighting the fact that adopting powers is not just adding to our ontology but effectively embracing a novel metaphysical paradigm. This may lead to a fascinating reconfiguration of old problems; as such, the final two papers of this Topical Collection deal with applications of powers metaphysics in metaphysics *tout court* and philosophy of mind.

Williams's talk of "metaphysical paradigms" is not a mere *façon de parler*; a metaphysical paradigm is a shared and socially reinforced collection of metaphysical claims, which can be used to draw the boundaries of the metaphysical issue considered by a certain community, so as to effectively restrict the formulation and acceptable solutions of such issues. In his paper (*A New Paradigm for the Problem of the Many*), Williams puts his view to work, showing how moving the space of solutions far from Neo-Humeanism and closer to the "Powers paradigm" can reshape the way we approach the Problem of the Many. Traditionally understood, the Problem of the Many is a problem of composition whose conclusion undermines our common thinking about composites (*inter alia*: Unger 1980; Woods 2017). This is a well-known problem: for any object x of the kind K occupying a region, there are numerous sums of parts of x that differ only minutely and that are so arranged such that they all count as things of the kind K . If so, there are multiple K s where we commonly take there to be just one.

Within the neo-Humean paradigm, there is a natural inclination to treat compositional entities as inert and arrangement as the cornerstone in solving the problem. Nevertheless, Williams claims that once we move away from Neo-Humeanism, it becomes clear that arrangement is not the only game in town. He proposes to combine facts about arrangement with a model of powers-based causation in which manifestations are produced by "constellations of powers". Williams' underlying intuition is that being an x requires at least the capacity for some x -wise behaviour. The shortcoming of this solution is that a collection of parts counts as a candidate of the kind K only if it can produce K -typical manifestation. According to Williams, the only candidate capable of doing so is the candidate that is not missing any parts/powers, thus, this powers-based solution counts as a maximal solution. Ultimately, what we get from the Powers paradigm is a shift in focus: from considering possible composites that all of which count as K but have different compositions to possible composites

not all of which counts as K due to the constellation powers involved. While there are plenty of the first, “there aren’t a bunch of entities that differ only minutely in composition, but that nevertheless differ in their capabilities”.

Although Williams’ concern is with the Problem of the Many only, he urges us to think of it as part of a larger enterprise: that of extending the power ontology beyond questions of causation and modality toward a more comprehensive endeavour directed at a more extensive set of metaphysical problems. It is by engaging with such endeavour that, Williams argues, “a fully-fledged powers-based paradigm starts to form”. Gozzano takes it from here. In his *Phenomenal Roles: a Dispositional Account of Bodily Pain*, he seizes the opportunity to re-evaluate the thesis that phenomenal properties cannot be analysed in functional terms, and hence cannot be dispositional (Chalmers, 1996; Block, 1980; inter alia). Instead, he argues that a peculiar phenomenal property, bodily pain, can be understood as a non-fundamental yet essentially dispositional property. Hence, if Gozzano is right, applying the “powers paradigm” would show that functionalisation is indeed possible for some phenomenal properties. Key to his proposal is the notion of phenomenal dispositionality, conceived in terms of phenomenal roles characterising pain necessarily according to the view that dispositions fix their roles necessarily. These roles are complex features of pain and can be distinguished into internal and external. Both internal and external roles are part of the dispositional profile of pain, as they “essentially individuate it as a manifestation of our capacity to detect salient stimuli and as a trigger for self-care states”. The internal features determine the causal relation that pain can enter into (their intensity, location, and dynamics) and the external phenomenal roles (.viz those that pick out the causal relations in which pain is embedded). The latter can be divided into stimuli detection that signal salient potentially damaging stimuli, and self-care states (e.g. the property of attending to the body location in which pain is felt). Pain is complex because it is both the manifestation of salient stimuli and the dispositional partner of self-care states. But how is pain, as a dispositional property, individuated? Here Gozzano builds on Bird’s (2007) and bites the bullet on self-individuation (see Lowe 2006). He believes that appealing to the internal features of pain provides a non-circular way of individuation because intensity, location, and dynamics all have minimal and maximal limits, which are both essential and fixed. Not only do they establish a ground for individuation, but they also grant pain causal efficacy by being latched with physical realisers, thus playing the causal role of pain in biological terms.

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