

Nature's Capacities: Schelling and Contemporary Power-Based Ontologies¹

Contemporary metaphysics is seeing a resurgence of interest in the concept of power. This concept is being applied to a range of debates: there has been much work on using powers to account for causation; on properties as powers; and a growing interest in powers-based accounts of free will. However, despite this range of applications for the concept of power, a distinct lack of work exists focussing on extending this concept to ontology as a whole – on answering the question ‘*can there be a world of powers only?*’² This lack of investigation into what a power-based ontology would look like raises a number of questions for accounts which use powers: if properties are powers, what is the nature of the objects which possess these properties? Do powers make up objects? If not, how do powers interact with whatever objects are composed of? Is an ontology which posits powers as the fundamental ontological unit viable? What would the advantages and pitfalls of this kind of view be?

I want to argue that Schelling’s *Naturphilosophie* provides an ontology which helps to answer these questions. In this paper I defend two main claims: firstly, that Schelling’s *Naturphilosophie* is best understood as a powers-based system, where nature is understood as composed of powers in process, all the way down. My argument for this supports my second claim: that Schelling’s work is useful for metaphysicians interested in what a power-based ontology would look like; its implications; its benefits; and its potential pitfalls. Because of the centrality of powers to the *Naturphilosophie*, and because of the holistic nature of Schelling’s work, the role of powers and relationship of powers to a range of other concepts is carefully specified. Thus a number of the implications and advantages of this view are already worked out and presented in the texts on *Naturphilosophie*.

I begin with a brief outline of the characterisation and use of powers in the contemporary literature, to show the marked similarities between these accounts and Schelling’s. I then present my reading of the *Naturphilosophie*

¹ Thanks to Phoebe Page and Joe Saunders for comments on an earlier draft of this paper.

² Marmodoro, 2010, 1.

as a power-based ontology, and gesture towards some ways that this account could help to fill some of the gaps in the current literature. Finally, I argue that Schelling's *Naturphilosophie* also demonstrates some possible problems that will arise for any ontology of this kind.

1. Powers in Contemporary Metaphysics

Although there are a number of competing accounts of powers in the literature (which differ in their characterisation of the ontological status of powers), there are certain features regarding the nature of powers which are common to all accounts. Firstly, the terms power and disposition are generally used interchangeably. A power is thus understood as a disposition, a property of an object which disposes that object to behave in a particular way:

Powers are properties like fragility and electric charge, whose possession disposes their bearer in a certain way. The instantiation of fragility in the glass disposes the glass to break if struck in appropriate circumstances.³

The specific behaviour which a power disposes its bearer towards is called a manifestation: the power of fragility in the glass is manifested when the glass breaks. Therefore powers are fundamentally directional by nature: a particular power is directed towards a particular manifestation or set of manifestations – the power of fragility disposes its bearer to break when struck; the power of elasticity disposes its bearer to stretch, bounce, or be flexible, given the appropriate conditions.

The example of fragility makes explicit a further aspect of the nature of powers: they can be possessed by an object whether or not they are ever manifested, just as the glass remains fragile even if it never breaks. Thus although a manifestation is ontologically dependent on the power, the power is ontologically independent of its manifestation and continues to exist even when the manifestation is not and never will be present:

The occurrence of the manifestation of a power depends on the existence of the power, but not vice versa. Powers can exist in the absence of their

³ Ibid.

manifestations and so are ontologically independent of their manifestations.⁴

This example draws attention to another feature of the nature of powers: they are intrinsic properties of the objects which bear them;

Things and materials have powers even when they are not exercising them, and that is a current fact about them, a way in which they are currently differentiated from other things [...] The difference between something which has the power to behave in a certain way and something which does not have that power is not a difference between what they will do, since it is contingently the case that their powers are, in fact, ever exercised, but it is a difference in what they themselves are. It is a difference in intrinsic nature.⁵

To ascribe a disposition to an object is to make a claim about that object's nature, and to claim that when a particular phenomenon occurs it is the natures of the objects or materials involved that are responsible for its occurrence. Powers should therefore be understood as immanent to the objects which bear them, as the dispositions that they confer on objects are an essential part of those objects' natures.

As I mentioned above, in the literature there are a variety of different positions on the ontological status of powers: here I will be focusing on those which claim that dispositional properties are fundamental, and therefore that any other properties of objects are reducible to their dispositional properties. This class of views (referred to as dispositional monism or pan-dispositionalism⁶) will be my focus because it is most similar to the kind of position which posits powers as the fundamental ontological constituent that I take Schelling to be advancing in the *Naturphilosophie*.

1.1 Dispositional Monism: Powers as Properties

Dispositional monism is defined by Mumford as: 'The ontological thesis that there is only one fundamental type of property. All properties are dispositional properties; categorical properties do not exist.'⁷ And by Molnar, who prefers the term pan-dispositionalism, as: 'an ontological position

⁴ Molnar, 2003, 82

⁵ Harré, 1970, 84-85

⁶ These terms tend to be used interchangeably, though Tugby (2012) argues that there is a distinction that should be made between these positions. In what follows I will be using these terms as interchangeable.

⁷ Mumford, 1998, 19, emphasis removed.

according to which every genuine property (on a sparse theory of properties) is a power, and the same is true of every genuine (unfounded) relation.’⁸ This position claims that dispositional properties are the fundamental properties of objects, and any other properties of objects are ontologically dependent on these dispositional properties.

This account will characterise powers as having similar features to those outlined in section 1 above, with a few additions. Taking my cue from Molnar I identify five central characteristics of powers on a pan-dispositionalist account:

1. Directionality - ‘A power has directionality, in the sense that it must be a power for, or to, some outcome.’⁹ As outlined above, powers are inherently directional, in that they are always directed towards a particular manifestation or set of manifestations. Molnar argues that because of their directional natures powers should be understood as intentional, as they are always directed towards something beyond themselves: their manifestation is thus their intentional object.¹⁰ This intentionality is different to simply having a direction as the power is always directed *towards* one or a set of *specific* manifestations. The characterisation of powers as intentional has strong parallels to Schelling’s account, where powers are to an extent to be thought of in the same terms as subjective activity. This directedness of powers ensures both the inherent activity of powers and the fact that there must be more than one power in the system, as powers must have something outside of themselves to be directed towards.

2. Independence. The independence thesis refers to the fact that powers are ontologically independent of their manifestations – although the manifestation is ontologically dependent on the power, the power continues to exist even if the manifestation is never present. This does not mean that there is no necessary connection between a power and its manifestation (this connection is always present due to the intentionality of powers, the fact that they are always powers *for something*), just that the existence of the manifestation is not necessary for the existence of the power.

⁸ Molnar, 2003, 153

⁹ Ibid. 57

¹⁰ Ibid. 62-63

3. Actuality. The actuality criterion is tied to the independence thesis, and claims that powers are fully actual properties of their bearers. Thus powers are not simply potentialities for given manifestations; they are actual properties of their bearers which exist independently of any given manifestation.

4. Objectivity. The objectivity thesis is sometimes referred to as the mind-independence thesis, as it claims that powers have a real objective existence in the world and are not dependent in any way on the activity of minds. This (coupled with the actuality criterion) gives rise to a conception of objects as having real and irreducible causal powers which exist objectively.

5. Intrinsicity. Finally, Molnar argues that powers are intrinsic properties of their bearers: they are an essential aspect of the nature of their bearers and do not depend on contingent relationships with other objects or powers. However, following Bostock¹¹ I would like to claim that although *most* powers are intrinsic to objects in this way there are also powers which should be thought of as *extrinsic*: as conferred on objects by virtue of particular contingent relationships to other objects. Allowing extrinsic powers means that properties such as spatial location and spatial relations to other objects (which are clearly not intrinsic properties) can be conceived as dispositional. Because these properties can be causally relevant it seems fair to consider them as dispositional, and this allows the pan-dispositionalist to dispense with the idea that she needs to allow the existence of categorical properties (such as Molnar's 'S-properties') in her ontology.

One of the regress objections to dispositional monism regards the question of how the nature of a power is fixed¹² – as power's nature becomes determinate by virtue of its possible manifestations (i.e. its relations to other objects) it seems that powers can only be determined relationally, which appears to lead to a regress as each power always owes its nature to another, which owes its nature to another, and so forth. One response to this objection¹³ is to argue that there is a circularity in the determination of the nature of powers, but that this circularity is not vicious. Rather, the natures of

¹¹ Bostock, 2008. And, to an extent, Mumford, 2004.

¹² This is generally referred to as the 'always packing ever travelling' objection. See, for example, Armstrong, 1997 and Bird, 2007

¹³ See, for example, Bostock 2008 and Mumford 2004

powers are fixed collectively in terms of their place within a system of powers, a web of mutually determining relations. Williams likens this to semantic holism, which claims that the specific determinate meaning of a word in a given language depends on the specific determinate meaning of the other words with which it is arranged in a whole system.¹⁴ That the words need the system, as well as the other words within the system, in order to fix their identity is not seen as problematic, therefore we should not find it problematic that the nature of powers are fixed in a similar way.

These considerations indicate that a power-based ontology will necessarily be holistic – powers get their identities fixed by their relations to other powers within a holistic network:

A property cannot stand alone, unaffected by and unconnected with anything else. A world comes with a whole connected system of properties [...] The properties that are real in a world must, therefore, form an interconnected web: a system with no property standing alone or outside.¹⁵

Mumford argues that this holistic conception of properties (understood as powers) fits with our intuitive understanding of properties: we cannot conceive of how a property that was not a member of such a web could be a property at all, as it would be unable to have effects on anything and would therefore be unable to have any fixed determinate identity. This account of the holism entailed by pan-dispositionalism again bears striking similarities to Schelling's view: in the *Naturphilosophie* the powers which constitute nature form an interconnected whole; and it is this whole which grounds their natures and their interactions.

1.2 Causal Powers

In addition to accounts which posit powers as properties, there are also a number of views which put powers at the centre of conceptions of causality.¹⁶ Power-based accounts of causation claim that objects have particular causal powers and that it is these powers which are responsible for causing change in

¹⁴ Williams, 2010, 96

¹⁵ Mumford, 2004, 182-3

¹⁶ These accounts will not always be pan-dispositionalist: a number of these views will accept powers as part of their ontology but will also admit the existence of other kinds of property. These views will therefore be subject to some of the worries I raised earlier, such as the question of how we should understand the relationship between powers and the other properties of objects.

that object or in the world. This view therefore sees objects as intrinsically causally active: objects bear particular dispositional properties and it is the activity of these properties which leads to causal change in the world.

Causal powers thus spring from the basic natures of objects: objects have particular properties and it is these properties which dispose them to behave in certain ways in particular circumstances:

[W]ithin this view one may see [the behaviour of objects] as flowing from their natures as constitutions or consequences of what they are [...] Being of the right nature endows a thing or material with the power to manifest itself in certain ways or to behave in certain ways in the appropriate circumstances.¹⁷

A power-based account of causation sees causality in terms of manifesting dispositions: an object has particular dispositional properties and a tendency to manifest these properties given particular external circumstances or stimuli,¹⁸ and it is this manifestation which leads to change in the world. The dispositional properties of objects therefore fix which causal roles these objects are able to play: as a dispositional property is always directed towards a particular manifestation or set of manifestations, an object which has that dispositional property bears the causal powers to bring about that particular manifestation.

The account of causation as dispositional implies a reciprocal relationship between the objects involved in causal relations, as it will take two objects manifesting complimentary powers in order to produce an effect. In order to smash a glass it is not enough to have a glass which has the power of fragility (i.e. a disposition to break): one must also be in possession of an object which has the power to break things; and it will take these two objects manifesting their powers together in order that the effect (the glass smashing) occurs. This indicates that the conception of the relationship between causes and effects on a power-based account is different from traditional accounts which see causes as fully active and effects as merely passive: a dispositional account of causality conceives of effects as arising from interactions between objects

¹⁷ Harré, 1970, 88

¹⁸ Not all dispositions need a stimulus in order to be manifested: there may be some powers which are continually manifested, such as gravitational mass which continually manifests itself by pulling objects towards it; and some objects will have powers which can manifest spontaneously, such as particles which undergo radioactive decay.

which are both equally active members of the causal process. Again, this view bears striking similarity to the *Naturphilosophie's* account of causation, which I outline below.

1.3 Gaps in the Current Literature

So far I have presented two of the most common uses of the concept of power in contemporary metaphysics: an account of properties as powers (dispositional monism); and an account of causation as depending on these powerful properties of objects. These positions are separable: one might argue for a power-based understanding of causation, while still maintaining that dispositional properties are in some sense reducible to other properties of objects. However, the strongest version of these views will argue that all properties are powers, and therefore that we should understand other features of the natural world, such as causation and natural laws¹⁹, in terms of the interactions of these powers.

Despite this strong realism about powers, there is very little engagement in the literature with the question of just how fundamental powers are: if properties are powers, then what is the relationship between these powers and the objects which bear them? Are objects *composed* of these powers? If powers are playing such a vital role in our ontology, does it make sense to conceive of powers as the fundamental ontological unit? What would an account of reality of this kind look like?

I now want to argue that Schelling's work can help shed light on these questions: as I will demonstrate, his *Naturphilosophie* advocates the kind of strong realism about powers which has so far been largely undiscussed in the literature. For Schelling, powers are more than just certain properties which objects have, but are themselves the fundamental ontological constituents. In the *Naturphilosophie*, the answer to the question: 'Of what does reality, at the basic level, consist?' will be powers, all the way down. This account therefore holds that all natural objects as well as properties are ontologically dependent

¹⁹I have not had the space to discuss the conception of natural laws entailed by pan-dispositionalism here. For a good account see Mumford, 2004. This is another area where the contemporary pan-dispositionalist account looks incredibly similar to Schelling's in the *Naturphilosophie*.

on fundamental natural powers.²⁰ Schelling's work is therefore instructive in terms of answering the questions that the current literature leaves unanswered: the *Naturphilosophie* provides a unified conception of nature as dependent on the activities of fundamental powers in process. In addition, Schelling provides an account of how we can make sense of causation, the constitution of objects, and the continuity between human agency and natural causality using this power-based ontology. Thus looking at Schelling's work can enable us to make sense of the viability of this kind of view, and to investigate any potential problems which it entails.

2. Powers in the *Naturphilosophie*

Before outlining Schelling's *Naturphilosophie* I want to say something briefly about the motivations for this view, and the striking similarity that it bears to contemporary motivations for adopting dispositional monism. Arguably, the resurgence of interest in the concept of power is due to a rejection of the Humean paradigm in metaphysics: this paradigm provides a picture of the world as composed of disconnected objects with no connections between them; and renders objects inherently passive as any causal activity is explained by something external to those objects. The power-based picture, however, sees objects as fundamentally active: properties and causal activities stem from the nature of objects themselves. It also accounts for the connectedness of natural objects due to the holism about properties that I outlined above. A further advantage of this view is that it avoids the need to evoke anything over and above objects and their natures in order to explain their activity: although the Humean picture might be thought of as metaphysically minimal it in fact necessitates the addition of natural laws

²⁰ I think that this conclusion is entailed by Mumford's view, although he does not explicitly discuss the relationship between powers and objects. Although he advocates a strong realism about powers, Molnar's ontology will not be as closely aligned with Schelling's as he admits properties in his ontology ('S-properties' such as spatial location) which he claims are not reducible to dispositional properties. However Molnar accepts the existence of ungrounded dispositions, and therefore seems to be committed to the claim that dispositions are more fundamental than objects. It is not always clear in the literature what the ontological status of dispositions is taken to be: although there are advocates of dispositional monism about properties these accounts tend not to discuss the fundamentality of powers or the question of the relationship between powers and objects. However there are accounts (in particular Mumford's and Molnar's) which accept the existence of ungrounded powers. It seems to me that this entails the claim that these ungrounded powers are the basic ontological unit, and therefore that natural objects are ontologically dependent on powers. However, this implication is not discussed explicitly by either Mumford or Molnar.

(understood as entities which are external to objects and necessitate their behaviour, thus giving the illusion of connections in the natural world) which stand over and above objects. The power-based account has no need to rely on these mysterious laws which exist separately to natural objects, as laws as well as properties and causal powers are understood on the basis of the dispositions of objects. This is a central advantage of this kind of view: it is able to account for natural connections as well as the causal activity of objects without appealing to anything over and above nature in order to do so.

Schelling's *Naturphilosophie* is motivated by a set of similar concerns, as demonstrated by his critique of mechanistic accounts of nature. This critique rests on the claim that the mechanistic paradigm is unable to account for certain aspects of nature: not only subjectivity and freedom; but also the purposive aspects of natural organisms and the interconnection of nature as a whole. Although I will not be able to discuss Schelling's central critiques of mechanistic thought in detail here, I want to briefly mention them to further demonstrate the closeness of this line of reasoning to the contemporary rejection of Humean accounts of nature. Schelling's critique of mechanism focuses on three central areas: the mechanistic account of matter (which fails because it entails a picture of matter as static, inert, and requiring some external power to confer properties on it and explain its causal activity); the mechanistic conception of causality (which fails because it assumes that all causation is purely efficient, and consists in a fully active cause necessitating a fully passive effect); and finally the inability of mechanism to account for the nature of organisms (due to its picture of objects and nature, the mechanist is incapable of accounting for organisms on the same terms that it accounts for other natural objects). Further, one of Schelling's central criticisms of mechanism as a whole mirrors the critique of Humeanism discussed above: although these views of nature take themselves to be making minimal metaphysical commitments, due to their impoverished conceptions of objects and nature they in fact have to appeal to some explanatory principle over and above natural objects in order to explain their activity, rather than explaining this from within the natural.

The first maxim of *Naturphilosophie* is therefore that nature must be treated as an autonomous, unconditioned, mind-independent and self-sufficient realm: the philosopher of nature should start from this basic assumption, and explain all phenomena in terms of purely natural powers: '[t]he first maxim of all true natural science, to explain everything by the forces of nature, is therefore accepted in its widest extent in our science.'²¹ As I will demonstrate, one of the central claims of *Naturphilosophie* is that reality, at the fundamental level, is composed of powers. These powers are both real and non-reducible, and produce the concrete objects which we experience in our day-to-day interactions with the natural world: '*force* is the ultimate [...] to which all our physical explanations must return.'²²

2.1 The Absolute as Power

For Schelling, investigations of nature inevitably lead us to:

[A] common principle in which, fluctuating between organic and inorganic nature, is contained the first cause of all change in the former and the final ground of all activity in the latter. Because this principle is everywhere present, it is nowhere; because it is everything, it cannot be anything determinate or particular.²³

This principle is what Schelling refers to as the absolute: the absolute is the fundamental principle which grounds all natural products; it is neither subjective nor objective but is the primordial indifference point which subtends all distinction and differentiation. The absolute is both the basis of all things and the totality of all things; it makes possible variety as well as interaction; and grounds both universality and particularity. It is the infinite unified whole which constitutes and encompasses all being, and the ground of all finitude and differentiation. If, however, reality consists in this universal undifferentiated whole, the question arises of how and why the world of our experience becomes differentiated: why does the world consist of a myriad of distinct individuals if it is the manifestation of an undifferentiated whole?

²¹ Schelling, 2004, 195; SW III, 273.

²² Schelling, 1995, 37; SW II, 50. Schelling seems to use the terms 'force' and 'power' (and sometimes 'actant') interchangeably throughout the texts on the *Naturphilosophie*. I am similarly using these terms as interchangeable.

²³ Schelling, 2010, 89; SW II, 347

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Schelling is able to make sense of this question because, on my reading, the absolute itself is a power. Schelling frequently describes the absolute as primordial will or eternal act, and I suggest it is this which necessitates that the absolute goes beyond itself and creates a world. The language of will and act indicates that the absolute is best thought of in dispositional terms: the absolute is a power, and as such it is always directed towards something beyond itself – its manifestation as nature. The absolute *'is itself this eternal activity, since it belongs to its idea that immediately through its concept it should also be, that its essence should also be form for it, and the form essence.'*²⁴ The nature of the absolute is such that it demands to be manifested: the reason that there is something rather than nothing is that the nature of reality is dispositional; the absolute is a power which strives to manifest its essence in form.

As undifferentiated whole the absolute cannot concretely exist: it can only actualise itself through concrete particulars. This necessitates that the undifferentiated absolute has to divide, to introduce differentiation within itself in order to give rise to distinct entities.²⁵ Schelling characterises this differentiation in a number of ways: the absolute divides into essence and form; universal and particular; ideal and real; subject and object; productivity and product; productivity and limitation. The crucial aspect of all of these distinctions is that both terms are mutually dependent. For example, the infinite productivity of the absolute and the finite product which constitutes nature both require one another: if nature was purely product, the conditions of its productivity would lie outside it, which would mean invoking a transcendent entity and an extrinsic purpose, both of which Schelling is committed to denying. Thus the ground of nature's productivity must lie within it: productivity and product must be united if nature is to be an autonomous self-sufficient realm. Similarly, without finite products to express itself in and oppose itself to the infinite productivity of nature would come to nothing, would never be actualised.

²⁴ Schelling, 1995, 47; SW II, 65

²⁵ Ibid. 150, SW II, 118

This structure of opposing but mutually dependent powers which are united as two aspects of the same process is central to Schelling's conception of nature, and his conception of natural beings. For Schelling, all natural beings reflect the basic activity of the absolute of which they are manifestations: beings are products of the interactions of opposed but mutually dependent powers, which are unified in nature as a whole. This highlights the centrality of powers to Schelling's account: the absolute is primordial will or power which actualises itself through the interactions of its two basic tendencies or powers; this process is then repeated throughout nature whereby natural powers interact to produce different natural products.

2.2 The Actualisation of the Absolute

Although the absolute as productive and the absolute as product (nature) are inseparable, Schelling argues that we can nonetheless reconstruct the process through which the absolute actualises itself in the natural world. To refer to this as a process is misleading as the term process implies a temporal sequence of stages, when in the case of the absolute giving rise to nature these 'stages' are inseparable, mutually dependent, and do not take place in any temporal order. For this reason it is more apt to refer to them as aspects, where these aspects are simultaneous and presuppose one another: Schelling argues that the third aspect is only conceivable in relation to the first two and, conversely, that these first two only become possible in relation to the third.²⁶ These three aspects constitute three different unities (with Schelling characterising the absolute as the unity of all three unities): the first unity expresses the transition of essence into form, the infinite embodied in finitude, and characterises the manifestation of the absolute in its concrete form as material nature. The first unity necessitates the second, which is the transition of form into essence, the finite embodied in the infinite, and is constituted by the arising of the subjective in nature in the form of light. The third embodies the unity of the first two, but unites them *as distinct*: they

²⁶ Schelling, 1995, 181; SW II, 226

retain their difference within this final unity.²⁷ Schelling describes these aspects as the real unity, the ideal unity, and the unity of real and ideal.²⁸

This dynamic sequence is repeated throughout nature, and through this three-fold process different natural products arise. Nature's forces are a reflection of the fundamental powers which constitute the activity of the absolute: a positive tendency for infinite productivity which constitutes a continual movement and striving forward; limited by a negative force which strives to turn the productive force back on itself; and finally the two forces are unified (as distinct) in particular products. It is the interaction of these forces at different levels of nature which drives nature's productivity and structures the development of natural products.

The organising activity of nature's basic forces constitutes a continual process which necessarily extends to infinity; if everything that exists is a manifestation of the absolute we must conclude that:

*[B]eing itself is nothing other than the constructing itself, or since construction is thinkable only through activity, being itself is nothing other than the highest constructing activity, which, although never itself an object, is the principle of everything objective.*²⁹

As the absolute is by nature a productive power, it follows that its activity will not reach a conclusion until it has fully realised its nature in its product (or, to borrow the language of contemporary dispositionalism, until it has realized all of its possible manifestations). Thus the absolute continually strives to manifest itself in a product which expresses the universal, in a form which wholly exemplifies its essence. However, the absolute can only produce finite products which are therefore incapable of expressing its nature: as the absolute is infinite its activity could never be exhibited in a finite product but only in an infinite one.³⁰ This entails that nature is an infinite process: the productive tendency of the absolute continually attempts to create an infinite product, however as all products involve limitation it can only produce the finite.

²⁷ Schelling, 1995, 48; SW II, 64. As the absolute has come out of itself and created the original opposition that leads to nature, this opposition can never be fully overcome: the indifference of the absolute is impossible to recreate once differentiation has been introduced; this is why the third unity can only ever unify the first two *as distinct*.

²⁸ Ibid, 83; SWII, 107

²⁹ Schelling, 2004, 13-14; SW III, 12

³⁰ Ibid. 15; SW III, 14

It is because of the infinite productivity of nature that Schelling states: ‘the chief problem for the philosophy of nature is not to explain the *active* in nature, [...] but the *resting, permanent*.’³¹ As we have seen, products arise from nature’s infinite productivity due to nature’s opposing but mutually dependent disposition to limitation: products arise when productivity is limited by an opposing power; and natural products are the result of the mutual manifestation of these two powers.

Because natural products are manifestations of a productive power as well as a limiting power, Schelling argues that they all contain the potential for development and activity: rather than being static, natural objects are ‘permanent processes’³² which express the continual activity of the powers which constitute them in their own self-maintenance and preservation. The central point here is that for the *Naturphilosophie*,

[T]he main objects of investigation are dynamical forces or productivity, not static objects or products. The static object is always secondary with respect to the forces and powers that generate and maintain it.³³

Natural products are therefore better seen as stable manifestations of power relations, on this view, than discrete concrete objects. This is one of the reasons that Schelling’s ontology in the *Naturphilosophie* gives us a picture of nature as fundamentally interconnected – the difference between one object and another is not constituted by an absolute boundary, as objects (stable processes) are connected by virtue of being parts of a larger process. However, this also leads to one of the problems which I will raise for power-based views below.

2.3 Powers and Matter

The process through which natural objects arise from the interactions of the same basic forces is most clearly seen in Schelling’s account of the construction of matter. Schelling provides a number of arguments against the Newtonian conception of matter, concluding that the Newtonian account in fact demonstrates that the concept of force is more fundamental than that of matter: rather than matter coming first and forces somehow being implanted

³¹ Ibid. 17; SW III, 18

³² Ibid. 32; SW III, 39

³³ Peterson in Schelling, 2004, xxix

afterwards, force must instead be the ground of matter. Force is central to the Newtonian account as it is necessary to explain motion and interaction: without the concept of force, the Newtonian is left with an ontology of static discrete substances which radically contradicts our experience of the world. If matter is conceived as inherently inert, forces cannot be explained on the basis of matter. However, Schelling argues, matter *can* be explained on the basis of forces, and therefore we should take force to be the more fundamental of the two. Thus, Schelling concludes: ‘Matter and bodies, therefore, are themselves nothing but products of opposing forces, or rather, are themselves nothing else but these forces.’³⁴

The Newtonian is right to maintain that matter consists in occupying space, but Schelling argues that matter in fact *fills up* space – matter is able to occupy space only by virtue of being inherently active: ‘What IS *in space* is in space by means of a continually active filling up of space; therefore, in every part of space there is moving force’.³⁵ In order to account for matter’s ability to fill space, it is necessary to posit a positive force; a power which expands ensuring that no other object is able to fill the same point in space. However, Schelling argues that if matter were composed of this power alone it would continue to expand outwards to infinity, filling *all* space. If this were the case matter would in a sense be everything and nothing: there would be no determinate quantity of matter at any particular point in space; matter would be everywhere and therefore nowhere. Thus it is necessary for us to posit an opposing power which limits the activity of the positive power, restricting its activity to a determinate position. Again, this force alone cannot constitute the essence of matter, as if matter were composed of just this power its attempts to limit would result in its imploding into a single point; again matter would in a sense be nothing.

This is a difficult set of thoughts to grasp, and is perhaps best thought of in terms of limits: matter must include the power to fill space (in order for it to exist at all it must be capable of extending itself in space and preventing other objects from occupying the same space); however this power needs to be limited in order that matter can be a determinate quantity. The attractive or

³⁴ Ibid, 156; SW II, 195

³⁵ Schelling, 2004, 20; SW III, 22.

force is therefore necessary to provide a boundary which binds the expansive force to a determinate point, forming matter in space. Thus Schelling argues that:

[R]epulsive force without attractive force is *formless*; attractive force without repulsive force *has no object*. [...T]he object is never without its limit, or matter without its form. The two may be separated in reflection; to think of them as separated in reality is absurd.³⁶

This makes explicit the sense in which the construction of matter reflects the original activity of the absolute: both require the interaction of two opposed but mutually dependent powers interacting within a wider unity.³⁷ The positive and negative powers which manifest together to give rise to matter thus correspond to the original powers of productivity and limitation in the absolute.

Schelling concludes that ‘no matter is, or can be, anything but forces attracting and repelling through action and reaction.’³⁸ Matter itself, and all of its properties, depends on the nature of the fundamental forces which constitute it: ‘*all quality of matter rests whole and solely on the intensity of its basic forces.*’³⁹

2.4 Powers and the Genesis of Objects

Schelling’s account of the construction of matter from the fundamental forces of nature is reflected in his account of the emergence of organic from inorganic nature. The process through which matter arises is repeated at increasing degrees of complexity giving rise to electricity, chemical systems, magnetism, and so on up through the levels of inorganic nature until the organism is produced. This process then continues to repeat at the level of organic nature, giving rise to more and more complex organisms until reason and self-consciousness emerge at the level of the rational subject. Different natural beings thus differ only in terms of the combination and concentration of the forces which constitute them:

³⁶ Ibid. 187; SW II, 234

³⁷ Schelling, 2004, 189-192; SW III 264-268

³⁸ Schelling, 1995, 143; SW II, 179

³⁹ Ibid. 216; SW II, 272

[T]he identity of a material is ascertained only by the permanence of its qualities, its identity in no way differs from the latter; every material is thus nothing other than a *determinate degree of action*.⁴⁰

This helps shed light on Schelling's earlier claim that all natural products are simply processes: as all natural products are composed of varying degrees of forces these products are nothing more than the continual process of interaction of these forces. Qualitative differences between objects rest simply on differences in dynamic process: all natural objects are dynamic processes; different objects arise from different quantities and combinations of powers, and this accounts for their different qualities.

A second important point arising from Schelling's argument that all natural objects are composed of varying degrees of forces is that this further supports his claim that all of nature constitutes a single active system, and thus that there is no essential differentiation between different levels of nature and natural products. For Schelling, as each potency synthesises the forces present in the lower potency, nature constitutes more and more complex forms of the same basic process:

What is implicit, inchoate, and disparate on a lower level or potency becomes explicit, organised, and unified on the higher one. Since a higher potency unifies the factors of a lower potency, it reproduces them and so is not completely distinct from them.⁴¹

This unity of different natural products, and the claim that higher potencies arise from lower potencies, means that we can consider Schelling as an emergentist: claiming that certain natural products are emergent phenomena which arise from other natural products. This claim, that there is no essential differentiation between different levels of nature, will fall out of any ontology which posits powers as the fundamental ontological constituent, as powers are present and constitutive of objects at every level. Again, although this is in one sense a significant advantage of this kind of view (as it gives us a way to account for the unity of natural products), it also entails one of its downfalls, which I return to later.

2.5 Powers and Causation

⁴⁰ Schelling, 2004, 23; SW III, 25-26

⁴¹ Beiser, 2002, 548

Schelling's claim that all natural products are composed of the powers which characterise nature as a whole informs his conception of causation as a fundamentally reciprocal relation: reciprocal interaction is prior to efficient causality because the whole is given first. Other causal relations within the whole depend on this reciprocal relationship, and individual objects or substances then arise as a result of these relations. Schelling's account of causality places this reciprocity at the heart of all casual relations, and bears a striking similarity to contemporary dispositional accounts of causation.

One of Schelling's central arguments against mechanistic conceptions of nature consists in his refutation of the claim that there is only one kind of causality in nature: efficient causality. Schelling argues that this view of causation is unable to account for the kind of causality which characterises organic life, and therefore forces the mechanist into a reductive explanation of organisms. Further, Schelling holds that the conception of causality as always and only efficient prevents the mechanist from conceiving of nature as an interrelated whole (which in turn entails that the mechanist's conception of natural objects will always be impoverished as she is unable to understand them in terms of their relationships within this whole), as it implies that nature is composed of discrete isolated individuals whose only relations to one another are of active cause to passive effect. The paradigm example of this kind of conception of causality is found in Kant's second analogy,⁴² and for Schelling Kant's order of priority in the analogies demonstrates not only the fundamental problems with conceiving of causality as always efficient, but also the mistaken reasoning about nature which leads to this conception.

In the analogies Kant proceeds from the concept of substance to the concept of causality, and finally to the concept of community (reciprocal interaction) which is understood as a synthesis of the former two. Schelling argues that Kant is unable to give a satisfactory account of community because his conceptions of substance and causality already entail a world of isolated individuals only related by efficient causal links: explaining reciprocal interaction between these individuals is therefore ruled out at the outset. However the concept of community is necessary for accounting for the fact that we always experience objects as part of a larger network of other objects –

⁴² Kant, 2007, A189/B232-A211/B256

the fact that the world as a whole is an interconnected community of individuals – therefore Kant’s account falls short as it is unable to account for this fundamental aspect of the nature of objects.

Schelling argues that the order of Kant’s analogies must be reversed: Kant made the mistake of conceiving of the relationship between substance, causality and community in accordance with the order of experience (i.e. in terms of the order in which subjects discover these concepts) rather than the order of existence. Schelling argues that in fact community is foundational, and grounds both causal relations and substances rather than being a synthesis of the two. This order of explanation is the only one that can make intelligible the existence of relations and connections throughout nature: reflecting his argument for the priority of force over matter Schelling argues that as community can explain causality and substance but the latter two cannot explain the former, community must therefore be prior. In addition to this, giving priority to the community of substances better accounts for our experience of the world as an interconnected and unified whole.⁴³

This implies the need to rethink our conception of causality as purely efficient: if objects are always in webs of reciprocal relationships with other objects, and with the whole, the idea of causality as a linear relationship between two discrete individuals in which one is the causal actor and one the passive patient becomes incoherent. Schelling’s conception of causality thus places reciprocity at the centre of the causal relation.

Schelling’s account of causation and the importance of reciprocal interaction becomes more intelligible if we consider it in the light of my interpretation of the *Naturphilosophie* as a power-based ontology. On this reading reciprocity is central because the interaction of nature’s powers is ontologically primary: because the process through which forces interact is fundamental to nature, and because these forces always and only act in relationships with one another; reciprocal interaction between forces is therefore the primary causal relation. This indicates why for Schelling it makes no sense to think of causation in efficient terms, as active cause and passive effect, because it always takes two (or more) powers working together for an effect to arise. Thus there is activity on both sides of the causal relation,

⁴³ This summary of Schelling’s discussion of the analogies follows Esposito, 1977, 56-68

as causation requires the mutual manifestation of complimentary dispositions. Similarly my reading accounts for why, on Schelling's conception, causes do not necessitate their effects: firstly, due to the reciprocal nature of the causal relation, to identify one power as cause and another as effect will not always be straightforward; and secondly, as causation requires the *mutual* action of powers it becomes unintelligible to say that one of these powers alone necessitated anything in the other.⁴⁴ The idea that causes necessitate their effects comes from the mistaken conception of causes as fully active and effects as fully passive, which in turn rests on a conception of causation as only efficient and linear, which itself is based on a problematic world-view which sees reality as composed of inert and unconnected particulars which are moved to action by external forces. This, of course, is the picture that Schelling's analysis of matter urges us to reject in favour of an ontology which posits powers as fundamental.

2.6 The Importance of Powers in the *Naturphilosophie*

I have tried to show that the *Naturphilosophie* is best understood as a power-based ontology, arguing that on Schelling's account nature is composed of active forces which combine in various ways to give rise to different natural products. Before moving on I want to briefly make clear the centrality of Schelling's power-based ontology to his *Naturphilosophie*. I suggest that there are certain aspects of this account which are only made possible on the basis of his power-based ontology, as well as certain other aspects which draw heavily on the powers which underpin this system.

Firstly, Schelling's power-based ontology underlies his central claims regarding natural phenomena. As we saw above, Schelling's critiques of the mechanistic conception of nature draw heavily on his power-based ontology: his positive account of matter relies on a conception of opposed but mutually dependent powers; his arguments for the importance of reciprocal interaction in causality presuppose an account of causality as dispositional (because

⁴⁴ The fact that causation requires the manifestation of complimentary powers rather than one power alone, and that causes never necessitate their effects, is made explicit in Schelling's discussion of opium. Schelling argues that we cannot see opium as necessitating the effect that it has on organisms, and further we cannot claim that the opium alone causes these effects: the organic body also constitutes a cause of the effects that opium has on in it an important sense, as it needs to provide the right conditions (i.e. manifest the right dispositions) in order that the opium can take its effect. Schelling, 2004, 63; SW III, 83

reciprocal interaction between causes and effects only becomes intelligible when we conceive of this relationship in terms of two objects manifesting complimentary dispositions); and this in turn underlies his conception of the ends-based causality which defines not only natural organisms but also nature as a whole. Schelling's use of powers allows him to argue that nature is self-governing and self-grounding: as nature is composed of fundamentally active powers there is no need to appeal to an animating principle or ground external to nature to account for its activity.

Finally, Schelling's power-based ontology enables him to have the particular conception of agents that is present in the *Naturphilosophie*. The account of natural objects as arising from powers enables a conception of agents as fundamentally natural beings which emerge from the activity of natural powers. Because of Schelling's account of emergence (which I argued above is similarly dependent on his power-based ontology), he is also able to claim that there is something distinct and irreducible about agents: because there are certain powers (such as reason and self-consciousness) which only emerge at the level of the agent, agents are not reducible to the less complex natural powers from which they arise. However, Schelling is still able to claim that consciousness and reason are not transcendent properties as they too are natural powers. Schelling's picture of nature as a dynamic, interconnected system, which entails the non-reducibility of the subjective to nature while maintaining a continuity between agents and other natural objects, is thus made possible by the fundamentality of powers in his ontology.

3. Filling the Gaps

From the above I hope it is becoming clear that Schelling's *Naturphilosophie* is useful for answering some of the questions that I argued remain for contemporary work which utilises the concept of power. The *Naturphilosophie* provides a holistic account of nature which depends on taking powers in process as the fundamental ontological unit. This ontology makes explicit how we could conceive of objects as composed of powers; the relationship of these objects to their causal powers (the emergence of objects comes with the emergence of a new set of powers; these objects and powers

are then able to combine in various ways to give rise to larger objects); the emergence of subjectivity from nature; and demonstrates how powers-based accounts of causation and properties can be made intelligible as part of a wider ontology of powers.

Schelling's ontology also helps to make sense of why this power-based system is useful in terms of arguing for the existence of human freedom, something that there has been increasing interest in in the literature.⁴⁵ Firstly, the conception of objects as inherently powerful actors implies that the causal powers possessed by agents are fundamentally of the same kind as the causal powers possessed by other objects in the natural world. This account allows for a conception of agents as simply a particular kind of natural product, arising from a distinctive combination of powers, and therefore has no need to introduce a dualism between the causality of agents and the causality of other natural products. A distinctive advantage of a conception of human freedom derived from a power-based ontology lies in the fact that it has no need to argue that there is any incompatibility between agency and natural causality: this account allows us to be naturalists (broadly speaking) without denying the reality of human freedom. Human agency can thus be seen both as consistent with, but also importantly distinct from, other kinds of natural causality: not distinct because agents possess a different *kind* of causal power to other natural products; but because of the distinctive combination of natural powers which constitute the makeup of agents. Thus agents can be seen as natural products composed of a highly complex grouping of natural powers, which leads them to have highly generalised capacities with a wide range of possible manifestations.

This account also entails that freedom can never be absolute: agents are part of a system which includes a great many other bearers of causal powers, thus the behaviour of agents will often be restricted by the activities of these other causal actors. Thus this conception is able to account for both the causal force possessed by agents as well as the fact that this causal force is often limited by external circumstances.

Despite these advantages, I now want to briefly point to a problem which arises for Schelling's *Naturphilosophie*, and which I claim will arise for any

⁴⁵ See, for example, Mumford and Anjum, 2015

similar power-based view. This is one of the ways that I want to show that Schelling's work is of use in the contemporary debate: as well as providing a fully worked out power-based ontology, the *Naturphilosophie* also serves to highlight some problems (and possible solutions) which will arise for this kind of view.

4. A Problem

The problem I want to raise is a problem with individuation, which also entails a worry about the possibility of securing libertarian human freedom on this account⁴⁶: if all objects are composed of smaller objects, which are themselves composed of powers, on what basis can we pick out objects from this mass of powers in process at all?

This worry is a concern for Schelling in the *Naturphilosophie*, in particular in the *Outline* where he claims that it is the 'highest problem'⁴⁷ to be dealt with. To see why the worry arises, consider Schelling's likening of natural products to whirlpools:

A stream flows in a straight line forward as long as it encounters no resistance. Where there is resistance - a whirlpool forms. Every original product of Nature is such a vortex, every organised being. E.g., the whirlpool is not something immobilized, it is rather something constantly transforming – but reproduced anew at every moment. Thus no product in Nature is *fixed*, but is reproduced at each instant.⁴⁸

On both the *Naturphilosophie* and the pan-dispositionalist view all natural products are analogous to whirlpools: both are the stable-looking manifestations of activity taking place in the thing of which they are a part; therefore neither is a genuine individual. Although we might talk about the

⁴⁶ For reasons of space I will not be outlining the further problem which arises for human freedom in detail here. Briefly, it is a worry surrounding agential control which will remain even once the problem with individuation has been surmounted: if all powers are *nature's* powers in some important sense, how can we secure the claim that the agent *herself* is in control of her causal activity? An important feature of libertarian conceptions of human freedom is that the agent is the ultimate controller of her actions; however the power-based account leaves open the possibility that an agent's body has particular powers that are manifested without the agent controlling the exercise of these powers. Thus powers could be things that are simply exercised by bodies rather than something that I, as an agent, exercise. If the former is the case then it seems that a power-based account does not help to secure human freedom: it merely secures the existence of bodies with active powers, but does not entail that it is the agent who controls the exercise of these powers. Schelling himself was aware of this problem, evidenced by the fact that he later builds on the account of freedom entailed by the *Naturphilosophie* with his novel conception of freedom in the *Freiheitsschrift*.

⁴⁷ Schelling, 2004, 77; SW III, 102

⁴⁸ Ibid. 18n

whirlpool and the natural product as individuals, from a higher standpoint they are secondary to the activity which underlies them and which will eventually assimilate them again: in the case of the whirlpool, the river; in the case of finite beings, nature's powers.

Thus the problem arises: if everything is a manifestation of the activities of the same natural powers, how can we pick anything out of this mass of powers as a genuinely independent object? Put another way, what is the salient feature that makes the whirlpool the relevant object rather than the water droplets which make it up; or the molecules which constitute the droplets; or the body of water as a whole?

Let me say a little more about why this problem arises especially sharply for the pan-dispositionalist. The central claim of this ontology is that the same things – natural powers – are operative at all levels of nature: the pan-dispositionalist advocates an ontology of powers all the way down, which enter into relationships manifesting as stable objects. Notice that the term object is used loosely here: in the above claim 'object' refers to any stable manifestation of powers in a relationship. These objects could therefore be anything from an individual atom; a Lego brick; an anteater; a weather system; an angry mob; etc. Some of these objects are composed of smaller parts which are also objects in this broad sense: a human body is composed of particular organs, which themselves are composed of atoms; and this body is also capable of being part of larger objects, such as the aforementioned angry mob, or the ecosystem as a whole, for example. A power-based ontology entails this kind of nesting: we have interactions of powers which manifest as objects; these objects interact with other powers; these interactions can be manifested as further objects; and so on. On this ontology we have a variety of 'levels' of objects of different sizes, all made up of smaller objects, all the way down until we reach the smallest ontological unit, the ungrounded power. The problem this creates, I suggest, is that this picture makes it difficult for us to give a principled account of how we pick out the causally or explanatorily relevant objects. And this opens up a deeper worry: if we cannot give an account of how objects are individuated, then why talk about objects at all? Why not eliminate objects from our ontology in favour of the powers which constitute them?

The problem also becomes more pronounced when the accounts we give of different levels of objects contradict each other. For pragmatic reasons we might simply switch levels depending on our purposes, but this way of doing things falls short when our purposes include giving an accurate account of the causal processes which govern a system. This is especially relevant in debates surrounding human freedom: we have one level of explanation which focuses on the agent and her decisions and actions etc., and another which focuses on the lower-level causal processes taking place within the agent's body. Although both of these explanations alone may provide a useful account of the phenomena, when taken together they are contradictory as one posits the agent herself as the source of causal efficacy while the other claims this source is located in natural processes which take place below the level of the agent. This is especially problematic for the pan-dispositionalist as she must maintain that the agent and her parts are both manifestations of the same natural powers and processes: a claim which entails that both should be explainable within the same terms. Therefore the option of holding that contradictory explanations of one and the same phenomena can be made intelligible by the adoption of different perspectives is not an option for the pan-dispositionalist, as one of the central claims of her ontology implies that these phenomena must admit of a single explanation. The pan-dispositionalist must rather provide an account of which of these levels (the agent or her parts, for example) is fundamental: an account of why it is that only one of these things counts as the causally relevant object.

5. Solutions from the *Naturphilosophie*

The worry I have been outlining has two parts: the first concerns how we can identify objects as genuine individuals given an ontology which entails that everything is simply a manifestation of powers in process. The second arises *after* we identify individuals: once we have an account of the different kinds of objects that exist in the world we then need to give reasons for why we take the agent (and perhaps other objects on her 'level') to be causally or explanatorily relevant. The first problem concerns reduction: why, on this ontology, do we talk of objects at all rather than reducing these to the powers

which constitute them? The second concerns explanation: in terms of what should we understand the processes which take place in nature? This question appears straightforwardly epistemic, but has an ontological significance: it is not merely a question of how *we* should best understand the world, but rather a question of how *the world itself* should be understood.

The first of these problems is not too worrying for the pan-dispositionalist, as there is nothing in this ontology which entails reductionism: just because objects are *composed* of powers this does not imply that they are *reducible* to powers. This is demonstrated by the *Naturphilosophie* which claims that neither powers nor the objects which they give rise to have priority because the relationship between them is reciprocal. For Schelling, nature can only express itself in something that it is not (infinite productivity manifested as finite product), the actualisation of nature's powers depends on their being manifested in objects, therefore the ontological relationship of dependence between powers and objects is reciprocal: neither is reducible to the other. The pan-dispositionalist can therefore follow Schelling's lead and maintain that although powers may be prior in terms of genesis (powers 'produce' objects in some sense) this does not afford them any ontological priority.

The second problem is more difficult: although objects are not reducible to the powers which constitute them, we still need an account of why we take some objects to be reducible to their parts and certain objects to resist this kind of reduction. For example, why is it that we take an angry mob to be explainable in terms of the agents which constitute it, but we do not take these agents to be explainable in terms of their underlying physical parts?

For Schelling, this question is answered through his conception of organism, inspired by Kant's account of organic wholes in the third *Critique*.⁴⁹ For Schelling, there is a certain kind of natural object which is different from others because of the particular relationship between the whole and its parts: although the parts make up the whole (the whole depends on its parts), the arrangement and interaction of these parts is determined by the concept of the whole (the parts depend on the whole); the relationship of dependence between the parts and whole is reciprocal. These kinds of objects cannot be reduced to their parts because the whole itself plays an indispensable role in

⁴⁹ Kant, 1987, 366-377

structuring and ordering the parts: organisms are wholes which are greater than the sum of their parts, and they are therefore not reducible to these parts. This is what makes these objects the relevant 'level': they are neither reducible to their parts nor can they be assimilated into another object as its mere parts (and thus fail to be individuals) because they are a distinctive kind of whole; the kind that nature is disposed to produce as they are the kinds of objects which best exemplify the structure of nature itself.

This account of the nature of organisms may seem unpalatable to the contemporary metaphysician for a number of reasons. Firstly, Schelling's account of organisms and of nature as a whole requires commitments to both essentialism and some form of teleology in the natural world. This commitment to teleology is present on two levels in Schelling's account: first because there is a particular kind of organism which nature is disposed to produce (teleology at the level of the whole); and second because on this account organisms each have a telos, a structuring concept which governs the arrangement of their parts (teleology at the level of the organism). These claims about teleology in nature come hand in hand with a commitment to essentialism: an object's telos flows from the essence of that object, i.e. from the nature of the particular kind of being that it is. Schelling's ontology thus accounts for why we take certain objects to be the relevant ones through his essentialism: there are certain natural objects which exemplify a particular kind of concept and are therefore not reducible to their parts, as the manifestation of the whole is what structures the behaviour of the parts rather than the other way round.

Could the contemporary pan-dispositionalist use a similar solution to Schelling's while avoiding some of these potentially unpalatable commitments? The best option seems to be to focus on giving an account of the different kinds of part/whole relationships which exist in nature, as this could form the basis of the claim that agents are a particular kind of causally relevant whole and therefore cannot be explained in reductive terms. This will involve a commitment to a number of other claims. Firstly, the pan-dispositionalist will require an account of emergence in order to maintain that new objects can arise from lower level interactions of powers. Securing this claim should not be problematic as emergence is already built into her

ontology in the claim that natural products arise from the interactions of powers. However she will also need to provide a principled way of accounting for when a system counts as a new object in the causally relevant sense, which may prove more difficult.

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