A Humean Non-Humeanism

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Abstract

How should we account for the extraordinary regularity in the world? Humeans and Non-Humeans sharply disagree. According to Non-Humeans, the world behaves in an extraordinarily regular way because of certain necessary connections in nature. However, Humeans have thought that Non-Humean views are metaphysically objectionable. In particular, there are two general metaphysical principles that Humeans have found attractive that are incompatible with all existing versions of Non-Humeanism. My goal in this paper is to develop a novel version of Non-Humeanism that is consistent with (and even entails) both of these general metaphysical principles. By endorsing such a view, one can have the explanatory benefits of Non-Humeanism while at the same time avoiding two of the major metaphysical objections towards Non-Humeanism.

1. Introduction

The world is an astonishingly regular place. Apples fall, planes fly, and bread nourishes. The astonishment only increases when one looks at fundamental physics. Fundamental physical entities *always* seem to behave according to certain elegant, ironclad, mathematically precise rules. Why should this be so?

A natural first reaction to the astonishing regularity of the world is to think that things don't just *happen* to behave as they do, but, in some sense, they *have* to behave as they do. This "have to" is cashed out in different ways by different "Non-Humean" approaches to natural necessity.[1] Perhaps, for example, there are fundamental causal powers or dispositions in the world, or primitive laws of nature, or necessity relations between universals, which necessitate that things behave in the ways that they do.[2]

[1] Although the terminology of "Humeanism" and "Non-Humeanism" is now entrenched, it is not at all clear that David Hume himself was a Humean (e.g. see Strawson 2014).

[2] Mumford (2004), Bird (2007), and Shoemaker (1980) defend the view that there are fundamental powers/dispositions. Carroll (1994, 2008) and Maudlin (2007) defend the view that laws are fundamental. Armstrong (1983), Dretske (1977), and Tooley (1977) defend the view that there are necessitation relations between universals.

However, "Humeans" regard the necessary connections that Non-Humean views posit as metaphysically suspect. For Humeans, laws of nature merely summarize simple and informative natural regularities, and facts about causation, counterfactuals, and dispositions are all ultimately explained in terms of such laws.[3]

The main goal of this paper is to formulate a version of Non-Humeanism that avoids two of the main metaphysical objections that Humeans have made towards Non-Humean views. I begin by describing these two metaphysical objections and noting how they apply to existing Non-Humean views (section 2). Then, I will turn to formulating a version of Non-Humeanism that avoids these two metaphysical objections (sections 3-5). The version of Non-Humeanism that I will describe involves combining three different metaphysical views, each of which can be (and has been) defended for independent reasons. However, my goal isn't to further defend any of these three views in isolation. Rather, my goal will be to show how the combination of these views constitutes an attractive overall Non-Humean picture of natural necessity: one which keeps the Non-Humean intuition that there's a robust sense in which things *have* to behave in the way they do, while at the same time being compatible with some of the main metaphysical scruples of Humeans.

2. Two Humean Principles

The first guiding metaphysical principle that motivates Humeans often goes by the name of *Humean Supervenience*, which is described by David Lewis as follows:

> [A]ll there is to the world is a vast mosaic of local matters of particular fact, just one little thing and then another…For short: we have an arrangement of qualities. All else supervenes on that. (1986b: ix-x)

Let us make this vision a bit more precise. The kind of view that Lewis is advocating is a strengthening of the view that *truth supervenes on being*. According to Lewis, "truth supervenes on being" just in case "truth is supervenient on what things there are and which perfectly natural properties and relations they instantiate" (Lewis 1992: 218). However, there is disagreement about the nature of (perfectly) natural properties. Some conceive of natural properties as "pure powers", where the nature of such properties is exhausted by their modal relations to other properties (e.g. how such properties are disposed to interact with other kinds of properties). For example, one might think that the property of having a particular mass *just is* the property of

[3] Although most self-described Humeans use this "best-system" approach to laws to account for other nomic notions, one can accept an underlying Humean metaphysics without adopting the best system approach. For example, van Fraasen (1989) has argued that Humeans should deny that there are any laws at all, and Wilson (2009) has defended an alternative Humean account of causal facts that does not appeal to general laws. See Friend (2021) for further discussion of different versions of Humeanism.

being disposed to resist acceleration in certain ways and interact gravitationally with other objects in certain ways.[4] However, others conceive of natural properties as "qualities" or "categorical" properties, where the nature of such properties is *not* determined by their modal relations to other properties. Rather, such properties have their own intrinsic, non-relational nature.[5] For example, it is natural to think that our pre-theoretic conception of colors involves thinking of (say) *being red* as a quality.[6]

With this distinction in hand, we can now formulate the following two claims:

> **Truth Supervenes on Being (TSB)**: Every fact supervenes on what things there are and which perfectly natural properties and relations they instantiate.
>
> **Truth Supervenes on Qualitative Being (TSQ)**: Every fact supervenes on what things there are and which perfectly natural *qualities* and relations they instantiate.[7]

The first Humean principle that will be our main focus is TSQ. It is easy to see how standard Non-Humean views violate TSQ. For example, views according to which there are fundamental causal powers violate TSQ because facts about the distribution of fundamental powers do not seem to supervene on facts about the distribution of fundamental qualities. Other Non-Humean views go so far as to violate TSB, which is a weakening of TSQ. For example, according to certain primitivist views about laws, there are fundamental facts of the form [L(P)], where "L" is a fundamental operator interpreted as "it is a law that" and "P" is some proposition that is a law of nature. Since these facts are fundamental, there is no reason why such facts would have to supervene on facts about the distribution of perfectly natural properties and relations in the world.

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[4] For defenses of this kind of position, see Chakravartty (2003, 2007), Mumford (2004), and Bird (2007).

[5] While the distinction between categorical/dispositional properties is commonplace in discussions of natural properties, it is controversial exactly how to understand this distinction (see Taylor 2018 for a discussion of some of these controversies). It is beyond the scope of this paper to enter into the details of these controversies here, but it should be noted that for our purposes the distinction between categorical and dispositional properties is *not* simply a modal one. For example, Bird (2007: 66-67) defines a categorical property as any property that does not necessitate a corresponding power or disposition. However, such a definition doesn't allow conceptual room for the "grounding view of powers" that will be introduced in the next section. See Coates (2020) for a hyperintensional characterization of the distinction between qualities and powers in terms of essence and grounding that will be suitable for our purposes.

[6] Of course, upon reflection one might come to think that colors are dispositional properties (e.g. ones that are disposed to cause certain sensations in humans in normal conditions). Chalmers' (2006) conception of "Edenic" colors are paradigm examples of qualities.

[7] In other contexts, "qualitative" properties are meant to contrast with "haecceitistic" properties, such as the property of *being Alice* (e.g. see Dasgupta 2017). However, in this sense of "qualitative", both qualities (e.g. *being red*) and dispositions (e.g. *being fragile*) are "qualitative". For the entirety of this paper, I will be using the phrase "qualitative property" to refer to qualities rather than non-haecceitistic properties.

The second Humean principle that we will be focusing on is the following:

> **Hume's Dictum (HD)**: There are no metaphysically necessary connections between wholly distinct entities.[8]

To say that two entities are "wholly distinct" is to say that they are (i) distinct and (ii) do not have any mereological or spatiotemporal overlap.[9] Clearly, there are necessary connections between an entity and itself (e.g. necessarily, if [x is F], then [x is F]), and there are also necessary connections between entities that overlap (e.g. necessarily, if half of an apple is red, then the whole apple must be red-on-one-half). The Humean can even acknowledge that there might be not-so-trivial necessary connections between an entity and itself: for example, an object's having 5 units of mass necessitates that it does not have 7 units of mass, and perhaps an object's having a certain shape necessitates that it has a certain color.

However, if two entities are wholly distinct, then it is natural to be skeptical of any metaphysically necessary connection between them. Suppose there were two lights such that it was metaphysically necessary that for any time *t*, the first light is on at *t* iff the second light is on at *t*. This connection cries out for explanation. How can the second light even "know" about the first light? Even if it could "know" about the first light, why is it *impossible* for the second light to be out of sync with the first light? Perhaps more importantly, HD could also be supported by a conceivability argument. If two entities are wholly distinct, then no matter what the first object is like, it seems conceivable that the second object could be in any possible intrinsic state.[10]

Many Non-Humean views also violate HD. For example, consider a Non-Humean view according to which the laws of nature are explained in terms of the fundamental causal powers of physical entities. On such a view, if the universe were deterministic, then the intrinsic state of the past (which will include a specification of the causal powers had by things in the past) will necessitate the intrinsic state of the future, violating HD.

To my knowledge, no existing formulation of Non-Humeanism is consistent with both TSQ and HD. Insofar as Humeans are committed to TSQ and HD, it is therefore no wonder why they have rejected all forms of Non-Humeanism. In what follows, my goal will be to formulate a version of Non-Humeanism that is consistent with, and even entails, both TSQ and HD.

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[8] It is a subtle question how Humeans should formulate HD more precisely. For example, a Humean might wish to reformulate HD in a way that allows there to be a necessary connection between Socrates and his singleton set. For our purposes, these kinds of counterexamples won't be relevant, but for a wide ranging critical discussion of various different formulations of Hume's Dictum, see Wilson (2010).

[9] The choice of defining "wholly distinct" in terms of lack of merelogical and spatiotemporal overlap comes from Wilson (2010: 604-607).

[10] For a defense of the claim that a suitably idealized kind of conceivability entails possibility, see Chalmers (2002).

3. Part One: The Grounding View of Powers

We'll begin by considering a view that implies TSQ, even though (by itself) it does not imply HD.

In order to abide by TSQ, everything must supervene on the global distribution of qualities. But if we only have qualities to work with, and no fundamental causal powers, laws, or necessitation relations between universals, how can we possibly explain why things behave in the way that they do? How can we explain why apples fall, planes fly, and bread nourishes?[11] It would somehow have to be that the *qualities themselves* fully explain why things do what they do. In other words, it must be that the dispositions or causal powers of any given entity are wholly grounded in the qualities that that entity possesses. On this view, while there would be no *fundamental* causal powers, physical entities can still have derivative causal powers in virtue of having the particular qualities that they have.

Such a view has been independently motivated in different ways by Jacobs (2011), Kimpton-Nye (2021), Tugby (2021, 2022), and Builes (2022), among others.[12] Let us call the view that fundamental qualities ground (and hence necessitate) corresponding dispositional properties the *Grounding View of Powers* (GP).[13]

Perhaps the easiest way to get a grip on GP is by way of a concrete example. In the philosophy of mind, a number of different philosophers have been attracted to *Russellian Panpsychism* (e.g. Russell 1927, Strawson 2006, Chalmers 2015, and Goff 2017), which is the view that (at least some of) the categorical properties of fundamental physical entities are phenomenal properties (i.e. properties that characterize what it's like to be a certain entity). The *Phenomenal Powers View*, defended in different ways by Langsam (2011), Mørch (2014, 2018a, 2018b, 2019), Goff (2020), and Builes (2020) is the view that categorical phenomenal properties may ground certain physical dispositions purely in virtue of their intrinsic phenomenal character (i.e. what they feel like).[14] Combining Russellian Panpsychism with the Phenomenal Powers view results in a

[11] Here I am implicitly making the Non-Humean assumption that Humean explanations of these phenomena are inadequate. For more on the question of whether Humean laws can genuinely explain, see Lange (2013, 2018), Schumener (2019), Dorst (2019), Bhogal (2020), Kovacs (2020), Hicks (2021), and Emery (forthcoming).

[12] For example, Kimpton-Nye (2021) motivates such a view on the grounds that it avoids some of the central objections towards standard versions of "dispositional essentialism".

[13] The label "the grounding theory of powers" comes from Tugby (2021). A closely related view to GP is the "Powerful Qualities" view, according to which fundamental physical qualities are *identical* to (rather than ground) dispositional properties (e.g. see Strawson 2008 and Heil 2010) . Such a view is similar in spirit to the grounding view, but I will be focusing on the grounding version of the Powerful Qualities view here since it is easier to make sense of. It is interesting to note that the way that Coates (2020) makes sense of the Powerful Qualities view makes it equivalent to GP.

[14] Although Goff (2020) is skeptical that phenomenal properties are capable of grounding dispositions, he defends the possibility of closely related "consciousness+" properties grounding dispositions.

version of GP, where fundamental physical entities possess fundamental phenomenal qualities, which ground the dispositional properties of those entities.

Of course, both Russellian Panpsychism and the Phenomenal Powers View are very controversial, and it is far beyond the scope of this paper to defend these views here. However, it is worth at least giving some initial motivation for the Phenomenal Powers view in order to flesh out the example further. The Phenomenal Powers view is often motivated by reflecting on our own phenomenological experiences. It is natural to think, for example, that the feeling of *pain* makes subjects who experience it try to avoid it simply in virtue of how bad it feels. *Pleasure* might make subjects who experience it try to pursue it simply in virtue of how good it feels. Someone who feels *tired* or *exhausted* might be disposed to stay in bed simply in virtue of how tired they feel. These connections between these experiences and their effects are certainly defeasible. Of course, in our own case, human subjects endure pain for all sorts of reasons. Someone might endure short-term pain in order to avoid more pain in the future (e.g. going to the dentist), or in order to experience a greater pleasure (e.g. masochism), etc. However, in the absence of *any* interfering causes like these, it seems like pain has a "default" power to make subjects at least *try* to avoid it.

An important lesson behind this kind of example of GP is that it shows that the grounding connection between a quality and its corresponding power needn't be arbitrary. Rather, there seems to be an intelligible connection between the qualitative character of pain and its corresponding effects: it makes sense why someone having an experience with the qualitative character of pain would try to avoid it. In fact, Mørch (2014, 2018a, 2018b, 2019) has argued that it is *inconceivable* that the phenomenology of pain has any other causal power than the one that it in fact has. While a defense of this particular claim would take us too far afield, it does show that the defender of GP doesn't need to be committed to the view that the necessary connection between a quality and its corresponding disposition is brute, arbitrary, or otherwise unintelligible.[15]

Having gone through this example, however, it should be stressed that GP on its own is certainly not committed to either Panpsychism or the Phenomenal Powers view. In fact, one could think that both views are extremely implausible while still endorsing GP. The example is only meant to be a concrete case that illustrates the conceptual possibility of a view like GP. Another kind of example that has been used to motivate GP are geometrical properties (e.g. see Heil 2003: 86 and Martin 2008: 44-45). Intuitively, the (intrinsic and non-dispositional) property of *being a sphere* (partly) grounds a corresponding disposition *to roll* in suitable circumstances, whereas the property of *being a cube* does not ground a similar disposition, because the intrinsic non-dispositional nature of a sphere differs from the intrinsic non-dispositional nature of a cube.

[15] As Kimpton-Nye (2021) points out, however, one might also believe that the relevant grounding relations are "opaque", in the sense that it is conceivable that the grounding fact obtains without the grounded fact. See Schaffer (2017) for an extended defense of the general view that opaque grounding relations are pervasive.

Although GP has been independently motivated in many different ways, for our purposes the main attraction of GP is that it complies with TSQ. According to GP, all there is to the world is the global distribution of qualities. There aren't any primitive governing laws, necessitation relations between universals, or fundamental causal powers. It is the qualities themselves that are fully responsible for the behavior of fundamental physical entities.

4. Part Two: Endurantism

Although GP entails TSQ, it still faces problems with HD. To illustrate this problem with the simplest possible example, consider a deterministic Newtonian world containing nothing but a single particle. There are two ways to interpret such a world, depending on one's prior views about how things persist through time. One way of interpreting this world is that it is composed of infinitely many numerically distinct particle time-slices, each of which exists for a single moment of time. So, for any time t, there exists a particle-slice p_t that only exists at t. Now, since Newtonian Laws are deterministic, the state of the world at any one time nomologically necessitates the state of the world at any future time. According to GP, then, the intrinsic state of the world at t, which simply consists of the intrinsic state of p_t, will metaphysically necessitate the intrinsic state of the world at any future time t^*, which simply consists of the intrinsic state of p_{t^*}.[16] In other words, there is a metaphysically necessary connection between p_t and p_{t^*}, which violates HD.

So, if GP were conjoined with the view that there are such "temporal parts" of particles, then it would entail that HD was violated in this particular example. However, GP does not violate HD in this way if it is combined with the view that Newtonian particles *endure*. On this kind of view, instead of there being infinitely many numerically distinct particle time-slices in our example, there would only be a *single* particle that is wholly located at every time in which it exists. On this kind of view, the necessary connection between the particle at t and the particle at t^* is *not* a necessary connection between wholly distinct entities. Rather, it is a necessary connection between an entity and itself, since the particle at t is identical to the particle at t^* given Endurantism.

To put the point intuitively, the thought is that Humeans are *right* in thinking that it is deeply mysterious how there can be metaphysically necessary connections between wholly distinct particle time-slices. How can the particle time-slice in the future even "know" what was going on

[16] The relevant version of GP is one that is meant to account for all nomological necessities in terms of the (grounded) dispositions of fundamental objects. Although one could in principle account for some nomological necessities using the resources of GP and account for other nomological necessities in some other way, I will be assuming that GP is a complete theory of nomological necessity throughout this paper. Thanks to an anonymous referee for raising this concern.

with some wholly distinct particle time-slice in the past? How could a past particle time-slice make necessary demands on some future time in which it doesn't even exist?

The view that Endurantism might render the causal connections between the past and the future more intelligible has also been independently motivated by Haslanger (1989b), who doesn't herself appeal to Hume's Dictum. She summarizes her discussion as follows:

> [T]he past can be causally efficacious in the present only through things presently existing. Therefore, if nothing from the past [endures] to the present, the past can set no constraints on the present; the "causal message" cannot be communicated across the gap [...] From this we can see that [endurantism] does provide us intelligibility in explanations of change. Natural explanations work by showing the systematic causal interconnections between things. Without [endurance], the causal story becomes unconnected; neither the past nor the future can get a hold on the present in a way that is causally efficacious. (21)

A similar point can also be read into the following famous passage from Thomson's (1983), which claims that the view that the material objects have temporal parts is a "crazy" metaphysic:

> I said this seems to me a crazy metaphysic. It seems to me that its full craziness only comes out when we take the spatial analogy seriously. The metaphysic yields that if I have had exactly one bit of chalk in my hand for the last hour, then there is something in my hand which is white, roughly cylindrical in shape, and dusty, something which also has a weight, something which is chalk, which was not in my hand three minutes ago, and indeed, such that no part of it was in my hand three minutes ago. As I hold the bit of chalk in my hand, new stuff, new chalk keeps constantly coming into existence *ex nihilo*. That strikes me as obviously false. (211)

Many commentators have questioned the charge that new chalk comes into existence "ex nihilo" by emphasizing that the new chalk does not come into existence *uncaused*. Rather, the new chalk is caused to come into existence by previously existing chalk.[17] However, Thomson's remark that the new chalk keeps constantly coming into existence *ex nihilo* can be justified by reference to the background intuition that, following Haslanger (1989b), there can't be intelligible causal connections between past pieces of chalk and *wholly distinct* future pieces of chalk.[18]

[17] Heller (1990), Oderberg (1993: 86), and Sider (2001: 217) each make these points.

[18] Mumford (2009) has also independently argued that a powers-based metaphysics should be combined with endurantism, but see Williams (2019: 209-213) for a critique of Mumford.

5. Part Three: Monism

Even with both GP and Endurantism, however, there remains trouble with HD. Endurantism ensures that the necessary causal connections *within* a single enduring object do not constitute violations of HD, but necessary causal connections across *distinct* material objects are still problematic given HD. For example, consider a Newtonian world with nothing except two particles. Given a Newtonian understanding of gravitation, there is a necessary connection between the mass of each particle and the gravitational acceleration that the other (wholly distinct) particle experiences. If one particle were suddenly to double its mass, for example, the other (wholly distinct) particle would immediately experience twice as much gravitational acceleration.

This problem generalizes: as long as there are multiple physical objects causally influencing one another, then these necessary causal relations will constitute violations of HD. Moreover, all of our best physical theories suggest that the universe is a causally integrated system: every proper part of the universe is causally influenced by forces outside of it. The only "closed" physical system that is not causally influenced by anything external to it is the entire universe as a whole.

This observation opens the door to the last piece of the puzzle. According to metaphysical orthodoxy, the world is fundamentally built out of a plurality of "tiny" things (e.g. extensionless space-time points or point particles). However, according to Monists, the world is fundamentally a single, unified whole. Schaffer (2018) distinguishes between two different types of Monism, *Existence Monism* and *Priority Monism*. According to Existence Monism, there is only a single entity, the Cosmos. According to Priority Monism, there is only one *fundamental* entity, the Cosmos. However, Priority Monists also typically believe that there are various non-fundamental entities, which are all parts of the Cosmos. Let *Monism* (simpliciter) be neutral between these two views; that is, let Monism be the view that (at least fundamentally) the only entity is the Cosmos. The third and final part of our Non-Humean view will be a commitment to Monism.[19]

Let us start with Existence Monism. If we combine GP, Endurantism, and Existence Monism, then we finally arrive at a Non-Humean view that entails both TSQ and HD. On this view, all there is is an evolving Cosmos, which evolves in accordance with its own powerful nature, which is in turn fully explained in terms of its qualitative nature. This view entails TSQ by its commitment to GP, and it entails HD by its commitment to Endurantism and Existence Monism. The only necessary connections that there are are ones that are internal to the Cosmos itself.[20]

So, all is well and good for the Existence Monist. But, there is a wrinkle for the Priority Monist. If the Priority Monist grants that the Cosmos has wholly distinct non-fundamental parts, then

[19] For independent motivations for Monism, see Schaffer (2007, 2010a, 2010b, 2010c, 2013), Ismael and Schaffer (2016), and Builes (2021).

[20] This combination of Endurantism and Monism is also used by Builes and Teitel (forthcoming) to secure the lawful non-qualitative evolution of the universe.

there may well be HD-violating necessary connections between those parts. In response, the Priority Monist should restrict HD as follows:

> **Fundamental HD**: There are no metaphysically necessary connections between wholly distinct *fundamental* entities.

This restriction is perfectly compatible with Priority Monism. Moreover, this restriction need not be seen as an *ad hoc* restriction. The motivating spirit behind HD is that necessary connections between wholly distinct existences would have to be brute and inexplicable. This does seem to be true if the existences in question are fundamental. But, if the existences in question are non-fundamental, then perhaps their connections can be explained in terms of the fundamental base that they both arise from, without ever appealing to such necessary connections at the most basic level. This is exactly the case in Priority Monism.

One last clarification should be made about the kind of Monism at issue. Typically, Monism has been defended in a four-dimensional setting: where the entire spatiotemporal "block universe" is the only (fundamental) entity. However, because of our antecedent commitment to Endurantism, the relevant version of Monism for our purposes is a "three-dimensional" version of Monism, where the entire *universe at a time* corresponds to a fundamental entity, and this fundamental entity endures through time.[21]

Combining a four-dimensional version of Monism with GP would be fairly unnatural. By GP, the qualities possessed by the 4-D universe would ground a corresponding causal power possessed by the 4-D universe. However, the 4-D universe does not stand in causal relations to anything else, since it is all that exists! Rather, the natural view is that past times *within* the 4-D universe stand in causal relations to future times within the 4-D universe. This is exactly what happens in a 3-D Monist setting. Given GP and 3-D Monism, the qualities possessed by the 3-D universe at one time ground a corresponding casual power possessed by the 3-D universe at that time, and the relevant causal power causally necessitates the state of the 3-D universe at a later time (a relation which involves the same universal enduring object at different times).[22]

Let us step back a bit and motivate the case for Monism at a more intuitive level. If Monism is false, then the Cosmos can be thought of as a "mere aggregate" of tiny (perhaps even extensionless) fundamental entities. On this picture, it is natural for the Humean to think that all of these tiny building blocks can simply be mixed and matched in various ways, and any

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[21] Such a view is still neutral on whether one should adopt an Eternalist "block universe" metaphysics, according to which the past, present, and future are equally real, or a Presentist metaphysics, according to which only present objects exist. By itself, Endurantism has been developed in both Eternalist and Presentist frameworks.

[22] It should be noted, however, that if the combination of 4-D Monism and GP could be made sense of (perhaps by saying that the 4-D universe as a whole timelessly stands in a causal relation to itself), then 4-D Monism and GP by themselves would be able to account for TSQ and HD. For those who are antecedently inclined to reject Endurantism, this view is certainly worth exploring further.

necessary connection between wholly distinct building blocks would be entirely mysterious. However, on the Monist conception, the Cosmos should not be thought of as "built up" from a collection of independent and discrete building blocks. Rather, the Cosmos should be thought of as a single integrated and unified whole. In sum, the Non-Humean can *agree* with the Humean that wholly distinct fundamental entities should be freely modally recombinable, but instead of inferring that there are no necessary connections in nature (as Humeans do), they can instead infer that nature is fundamentally unitary.[23]

6. Other Humean Scruples

For short, let us call the theory I have defended here "GEM" (GP, with Endurantism and Monism). While GEM is consistent with (and even entails) two major Humean metaphysical principles, I certainly don't expect every Humean to find GEM attractive. However, I think that exploring *why* Humeans may not find GEM attractive can potentially lead to progress in sharpening the disagreement between Humeans and Non-Humeans. In particular, given that some Non-Humean views can satisfy both TSQ and HD, then is there some *other* attractive and unified metaphysical principle(s) that all Non-Humean views violate? And if there is, how exactly should that principle be precisely formulated? If such a principle can be precisely formulated, perhaps the debate between Humeans and Non-Humeans can be advanced by focusing on this other principle in place of TSQ and HD.

In the interest of beginning to answer this question, I will close by surveying some possible reasons why Humeans may not be attracted to GEM.

Let us start with GP. Although Humeans believe that all there is to the world is an "arrangement of qualities", most Humeans have a very thin conception of the nature of these qualities. Lewis (1986a: 205) wrote that "there isn't much to the intrinsic nature of a [quality]", and Black (2000: 91) goes further in saying that "just about all there is to a Humean fundamental quality is its identity with itself and its distinctness from other qualities". Following the terminology of Hildebrand (2016), let us call a quality whose intrinsic nature is exhausted simply by facts about what other qualities it is (not) identical to a *bare quiddity*, and let us call any quality that is not a bare quiddity a *qualitative quiddity*. If the fundamental qualities in the universe were merely bare quiddities, then it would be entirely mysterious how these "bare" properties could intelligibly give rise to specific dispositions (e.g. see Tugby 2021, 2022). Insofar as Humeans are committed to thinking that fundamental qualities are bare quiddities, they should therefore be skeptical of GP.

[23] This observation has also been made by Schaffer (2010b), who argues that failures of free modal recombination among some entities is a sign that those entities are not fundamental.

The best response to this Humean challenge, it seems to me, is to appeal to Lewis' (2009) own thesis of Ramseyan Humility, according to which our best scientific theories are entirely silent about the intrinsic nature of the world's fundamental qualities.[24] Instead, our only empirical knowledge of the world's fundamental qualities is by way of their causal-nomological roles. However, if Lewis' own epistemological views are correct, then, in particular, our best scientific theories are also silent on whether the world's fundamental qualities are bare quiddities or qualitative quiddities. Therefore, in the absence of some *a priori* argument that all qualities must be bare quiddities, Humeans should be open to the possibility that the world's fundamental qualities are qualitative (rather than bare) quiddities. Moreover, because we are entirely ignorant about the *nature* of these qualitative quiddities (at least if Lewis is correct), then it seems that we should be open to the epistemic possibility that such qualitative quiddities are capable of grounding corresponding dispositions, at least in the absence of some *a priori* argument for thinking that such a grounding account is impossible.[25]

Let us now turn to Endurantism. There are many different reasons why Humeans might be wary of Endurantism, and I cannot provide an exhaustive survey here. Instead, I will briefly consider three of the most influential objections to Endurantism.[26] First, many have worried that any account of how objects endure through time will be inevitably vague, arbitrary, or otherwise anthropocentric.[27] For example, there are various soritical situations where one object seems to smoothly and gradually transition into a numerically distinct object. Furthermore, many philosophers have found fission and fusion cases to be problematic (where one object splits into two objects and two objects combine into one object). Luckily, our commitment to Monism immediately dissolves all of these problems. According to the Endurantist Monist, there is a very simple, elegant, and precise account of how things endure through time: the one and only object that endures through time is the universe as a whole, which continues to endure so long as time goes on.[28]

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[24] Langton (2001, 2014) defends an interpretation of Kant in which he argues for a similar conclusion. Contemporary Russellian Monists, following Russell (1927), also endorse the same conclusion. Lastly, many (epistemic) "structural realists" in the philosophy of science argue for a similar conclusion (e.g. see Ladyman 2016).

[25] Another possible reason why Humeans may not be attracted to GP is that GP implies that any possible world with the same properties will be governed by the very same laws. However, as Bhogal and Perry (2021) have argued, the view that properties have their nomic roles necessarily is actually compatible with an underlying Humean metaphysics. Moreover, it is unclear whether Humeans should consider the view that properties can come apart from their nomic roles as a *desideratum*, or whether they should simply view it as a consequence of other deeper commitments of theirs.

[26] One of the arguments I won't be covering is Lewis' (1983: 76-77) argument that Endurantism is in tension with Humean supervenience. However, see Hawthorne, Wasserman, and Scala (2004) and Magidor (2016) for critiques of Lewis' argument.

[27] See, for example, Sider (2001: 120-139 and 2008: section 4) and Hawthorne (2006: 109).

[28] However, it is worth noting that the Priority Monist, who recognizes the existence of non-fundamental macroscopic objects, still faces these problematic cases. Partly for this reason, I believe Existence Monism is more defensible than Priority Monism. However, see Magidor (2016) for a defense of "liberal endurantism", which is also

The second reason to be wary of Endurantism, which was one of Lewis' central worries, is the problem of temporary intrinsics.[29] How can one thing endure through change if it has incompatible properties before and after the change? By now, Endurantists have developed and defended a number of different responses to this challenge. For example, perhaps properties are relativized to times (e.g. Mellor 1981: 110-114), perhaps instantiation is relativized to times (e.g. Johnston 1987), perhaps propositions or states of affairs are relativized to times (e.g. Haslanger 1989a), perhaps Presentism is true and so no relativization is needed (e.g. Merricks 1994), perhaps one can be a "serious tenser" without adopting a Presentist metaphysics (e.g. Zimmerman 1998), or perhaps one can resolve the problem by appealing to a constituent ontology (e.g. see Brower 2010).[30] Each of these responses is of course controversial, but Humeans have a lot of work cut out for them if they are to argue that there is *no* viable solution to the problem of temporary intrinsics.

One last reason to be wary of Endurantism comes from physics rather than philosophy. Insofar as Endurantists have a fundamental ontology of spatially extended three-dimensional objects, it might seem that they are committed to facts about absolute simultaneity, contrary to Special and General Relativity.[31] Endurantists have two very different responses to this worry. First, following Miller (2004) and Gibson and Pooley (2006), they could develop versions of Endurantism that are consistent with relativity theory and avoid this problem altogether. Second, if for some reason this first response cannot be made to work, they could concede that Endurantism requires a relation of absolute simultaneity, but argue that this concession is rationally defensible. For example, they could point out that several interpretations of quantum mechanics (such as Bohmian Mechanics and certain collapse interpretations) seem to require a relation of absolute simultaneity, and it remains an open question whether an eventual unification of relativity theory with quantum theory will utilize a relation of absolute simultaneity.[32] Alternatively, they might argue that there are good independent *philosophical* reasons to posit a relation of absolute simultaneity, and so long as it is consistent with physics to posit a privileged foliation of spacetime, it is perfectly rational to do so.[33]

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a precise, principled, and non-anthropocentric account of how objects endure that is compatible with Priority Monism.

[29] See Lewis (1986a: 203-204) and Lewis (1988).

[30] Also see Eddon (2010) for a recent treatment of three different arguments from temporary intrinsics. Eddon argues that all three of the arguments fail.

[31] For a sophisticated development of this worry, see Balashov (2010).

[32] For an overview of the fate of absolute simultaneity in quantum mechanics and quantum gravity, see Monton (2001) and Callender (2017: ch. 4 and 5). See Maudlin (2018) for an argument that the Aharonov-Bohm effect in Quantum Mechanics suggests a preferred foliation of space-time. See Barbour (2012) for an introduction to "Shape Dynamics", which is empirically equivalent to General Relativity (in contexts where space-time is relevantly "well-behaved"), but it (i) comes with a preferred foliation of space-time and (ii) is (Barbour argues) more amenable to quantization and thus to an eventual theory of quantum gravity. Lastly, see Carroll (2022) for an interpretation of quantum mechanics where a reference-frame-independent notion of time (but not space) is fundamental.

[33] For example, perhaps there are good independent reasons to endorse Presentism, which is often taken to require a relation of absolute simultaneity. See Builes and Impagnatiello (forthcoming) for a recent argument in favor of

Two further dialectical points can be made if the Humean is inclined to reject GEM on the grounds of relativity. First, because the relativity objection is empirical in nature, it doesn't help us in isolating the *philosophical* disagreement between Humeans and Non-Humeans. For example, if non-relativistic quantum mechanics had turned out to be the true final physical theory, would Humeans have been happy to endorse GEM? My guess is that they would not have, which suggests that there is still some distinctly philosophical objection(s), over and above the relativity objection, that explains why Humeans would not be attracted to GEM. Second, although GEM *might* be in tension with our best physics, many philosophers have argued that Humeanism is *also* in tension with our best physics, for example in its treatment of objective chance and its tension with the phenomenon of quantum entanglement.[34] Although Humeans have responses to these objections, so do Endurantists have responses to the relativity objection. At the very least, it is not obvious that Humeanism is more "science friendly" than GEM.

Let us lastly turn to Monism. To my knowledge, David Lewis himself never explicitly argued against Monism, since Monism has only recently begun to be much more widely discussed in contemporary metaphysics. Orthodox versions of Humeanism usually simply assume that the fundamental building blocks of nature are something like points of space-time.[35] However, one potential Humean argument against Monism is that, even though Monism is technically consistent with HD, it does not let the Humean *use* HD to construct a (non-trivial) combinatorialist account of metaphysical possibility.[36] Given a metaphysics of points of space-time, David Lewis (1986a) used a principle of recombination (motivated by HD) to (partially) characterize the space of possible worlds, but given a Monistic metaphysics, there is nothing to "recombine" using a principle of recombination.

Can the desire for a combinatorialist analysis of possibility serve as the fundamental unifying principle that distinguishes Humeans from Non-Humeans? It's at the very least not clear that it does. One of the foremost defenders of a combinatorialist analysis of possibility was Armstrong (1989), even though he was also one of the foremost defenders of Non-Humeanism. Similarly, there are contemporary Humeans, such as Sider (2011: ch. 12), who reject a combinatorialist account of metaphysical modality in favor of a broadly conventionalist account.[37] Moreover, as

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Presentism, which they argue is more powerful than the standard relativity argument against Presentism. Also see Emery (2019) for an argument that considerations from relativity should no more move a Presentist to Eternalism than they should move an Actualist to Modal Realism. Lastly, Builes and Teitel (forthcoming) have argued that philosophers who reject Qualitativism (the thesis that all fundamental facts are qualitative) have good reasons to believe in absolute simultaneity.

[34] Hall (2020) argues that the Humean analysis of chance is highly revisionary, and Maudlin (2007) has argued that Humeanism is in tension with quantum entanglement. See Bhogal and Perry (2017) and Ney (2021) for ways that Humeans might accommodate the phenomenon of entanglement.

[35] For independent philosophical reasons to think that the world isn't composed of a continuum of space-time points, see Giberman (2012), Segal (2017), and Builes and Wilson (2022).

[36] Thanks to an anonymous referee for making this point.

[37] Sider's (2011: ch. 12) discussion suggests an alternative characterization of Humeanism, according to which the world is "fundamentally non-modal". However, according to GEM, the world *is* fundamentally non-modal:

Wilson (2015) has argued, it is unclear whether a combinatorialist account of metaphysical modality is desirable in the first place, because there are a variety of ways that principles of recombination seem to either undergenerate or overgenerate the space of metaphysical possibilities. To take just one example, possible worlds with alien properties cannot be generated by "recombining" aspects of the actual world. In response to this problem, Armstrong (1989) chose to simply bite the bullet and deny that alien properties were possible, while Lewis (1986a) simply posited that there were possible alien properties without giving an account of them in terms of recombination principles (thereby giving up a purely combinatorialist account of possibility).

Having failed to find a compelling and unified (philosophical) reason why Humeans might reject GEM (or a compelling and unified philosophical principle that distinguishes Humeans from Non-Humeans in the first place), I would like to close by offering a "pluralist" hypothesis.[38] Perhaps there *just is* no unified, core disagreement between Humeans and Non-Humeans. Instead, perhaps there are simply a variety of Humeanisms and Non-Humeanisms, each of which can be motivated by a variety of different metaphysical and scientific concerns. In most cases, it might be clear how to classify a view as "Humean" or "Non-Humean", but maybe there are certain views, like GEM, which are less easily classifiable. Moreover, instead of trying to advance the debate by focusing on "the" central disagreement between Humeans and Non-Humeans, it might be better to adopt a more piecemeal approach, and assess the variety of different motivations that Humeans and Non-Humeans have had on their own terms.[39]

References

Armstrong, David. 1983. *What Is a Law of Nature?* Cambridge University Press.

Armstrong, David. 1989. *A Combinatorial Theory of Possibility*. Cambridge: Cambridge University Press.

Balashov, Yuri. 2010. *Persistence and Spacetime*. Oxford: Oxford University Press.

Barbour, Julian. 2012. Shape dynamics: an introduction. In *Quantum Field Theory and Gravity*, edited by Felix Finster, Olaf Müller, Marc Nardmann, Jürgen Tolksdorf, and Eberhard Zeidler, p. 257-297. New York: Springer.

fundamentally speaking, all there is to the world is an enduring global world-quality. The powers/dispositions that the world-quality grounds are explicitly non-fundamental.

[38] Thanks to an anonymous referee for suggesting the following pluralist hypothesis.

[39] Thanks to Mark Balaguer, Andrew Lee, Jack Spencer, Jessica Wilson, and two anonymous referees for their helpful feedback.

Bhogal, Harjit. 2020. Nomothetic Explanation and Humeanism about Laws of Nature. In *Oxford Studies in Metaphysics Volume 12*, edited by Karen Bennett and Dean Zimmerman, p. 164-202. Oxford: Oxford University Press.

Bhogal, Harjit and Zee Perry. 2017. What the Humean Should Say About Entanglement. *Noûs* 51, no. 1: 74-94.

Bhogal, Harjit and Zee Perry. 2021. Humean nomic essentialism. *Noûs*: 1-19. https://doi.org/10.1111/nous.12394

Bird, Alexander. 2007. *Nature's Metaphysics: Laws and Properties*. Oxford University Press.

Black, Robert. 2000. Against Quidditism. *Australasian Journal of Philosophy* 78, no. 1: 87-104.

Brower, Jeffrey. 2010. Aristotelian Endurantism: A New Solution to the Problem of Temporary Intrinsics. *Mind* 119, no. 476: 883-905.

Builes, David. 2020. Derivatives and Consciousness. *Journal of Consciousness Studies* 27, no. 9-10: 87-103.

Builes, David. 2021. The World Just Is The Way It Is. *The Monist* 104, no. 1: 1-27.

Builes, David. 2022. The Ineffability of Induction. *Philosophy and Phenomenological Research* 104, no. 1: 129-149.

Builes, David and Michele Odisseas Impagnatiello. Forthcoming. An Empirical Argument for Presentism. In *Oxford Studies in Metaphysics Volume 14*, edited by Karen Bennett and Dean Zimmerman. Oxford: Oxford University Press.

Builes, David and Trevor Teitel. Forthcoming. Lawful Persistence. *Philosophical Perspectives*: 1-26. https://doi.org/10.1111/phpe.12171

Builes, David and Jessica Wilson. 2022. In defense of Countabilism. *Philosophical Studies* 179, no. 7: 2199-2236.

Callender, Craig. 2017. *What Makes Time Special?* Oxford University Press.

Carroll, John. 1994. *Laws of Nature*. Cambridge University Press.

Carroll, John. 2008. Nailed to Hume's Cross? In *Contemporary Debates in Metaphysics*, edited by Theodore Sider, John Hawthorne, and Dean W. Zimmerman, 67–81. Blackwell.

Carroll, Sean. 2022. Reality as a Vector in Hilbert Space. In *Quantum Mechanics and Fundamentality: Naturalizing Quantum Theory between Scientific Realism and Ontological Indeterminacy*, edited by Valia Allori, 211-224. New York: Springer.

Chakravartty, Anjan. 2003. The Dispositional Essentialist View of Properties and Laws. *International Journal of Philosophical Studies* 11 (4): 393–413.

Chakravartty, Anjan. 2007. *A Metaphysics for Scientific Realism: Knowing the Unobservable*. Cambridge University Press.

Chalmers, David. 2002. Does Conceivability Entail Possibility? In *Conceivability and Possibility*, edited by Tamar Szabo Gendler and John Hawthorne, 145-200. Oxford University Press

Chalmers, David. 2006. Perception and the fall from Eden. In *Perceptual Experience*, edited by Tamar S. Gendler and John Hawthorne, 49-125. Oxford University Press.

Chalmers, David. 2015. Panpsychism and Panprotopsychism. In *Consciousness in the Physical World: Perspectives on Russellian Monism*, edited by T. Alter and Y. Nagasawa, 246-76. Oxford University Press.

Coates, Ashley 2020. Making Sense of Powerful Qualities. *Synthese* 198, no. 9: 8347-8363.

Dasgupta, Shamik. 2017. Can we do without fundamental individuals? Yes. In *Current Controversies in Metaphysics*, edited by Elizabeth Barnes, 7-23. New York: Routledge.

Dorst, Chris. 2019. Humean laws, explanatory circularity, and the aim of scientific explanation. *Philosophical Studies* 176, no. 10: 2657-2679.

Dretske, Fred. 1977. Laws of Nature. *Philosophy of Science* 44, no. 2: 248–268.

Eddon, Maya. 2010. Three Arguments from Temporary Intrinsics. *Philosophy and Phenomenological Research* 81, no. 3: 605-619.

Emery, Nina. 2019. Actualism without Presentism? Not by way of the Relativity Objection. *Noûs* 53, no. 4: 963-986.

Emery, Nina. Forthcoming. The Governing Conception of Laws. *Ergo*.

Friend, Toby. 2021. Why I'm not a Humean. *Pacific Philosophical Quarterly*. https://doi.org/10.1111/papq.12398.

Giberman, Daniel. 2012. Against zero-dimensional material objects (and other bare particulars). *Philosophical Studies* 160, no. 2: 305-321.

Gibson, Ian and Oliver Pooley. 2006. Relativistic Persistence. *Philosophical Perspectives* 20, no. 1: 157-198.

Goff, Philip. 2017. *Consciousness and Fundamental Reality*. New York, USA: Oxford University Press.

Goff, Philip. 2020. Revelation, Consciousness+ and the Phenomenal Powers View. *Topoi* 39, no. 5: 1089-1092.

Hall, Ned. 2020. Chance and the Great Divide. In *Current Controversies in Philosophy of Science*, edited by Shamik Dasgupta, Ravit Dotan, and Brad Weslake, p. 123-142. New York: Routledge.

Haslanger, Sally, 1989a. Endurance and Temporary Intrinsics. *Analysis* 49, no. 3: 119-125.

Haslanger, Sally. 1989b. Persistence, Change, and Explanation. *Philosophical Studies* 56: 1-28.

Hawthorne, John, Ryan Wasserman and Mark Scala. 2004. Recombination, Causal Constraints, and Humean Supervenience: An Argument for Temporal Parts? In *Oxford Studies in Metaphysics* 1, edited by Dean Zimmerman, p. 301-318. Oxford University Press.

Hawthorne, John. 2006. *Metaphysical Essays*. Oxford University Press.

Heil, John. 2003. *From an Ontological Point of View*. Oxford: Oxford University Press.

Heil, John. 2010. Powerful Qualities. In *The Metaphysics of Powers: Their Grounding and Their Manifestations*, edited by Anna Marmodoro. Routledge.

Heller, Mark. 1990. *The Ontology of Physical Objects: Four Dimensional Hunks of Matter*. Cambridge: Cambridge University Press.

Hicks, Michael Townsen. 2021. Breaking the explanatory circle. *Philosophical Studies* 178, no. 2: 533-557

Hildebrand, Tyler. 2016. Two Types of Quidditism. *Australasian Journal of Philosophy* 94, no. 3: 516-532.

Ismael, Jenann, and Jonathan Schaffer. 2016. "Quantum Holism: Nonseparability as Common Ground," Synthese. https://doi.org/10.1007/s11229-016-1201-2.

Johnston, Mark. 1987. Is There a Problem About Persistence? *Proceedings of the Aristotelian Society* 61, no. 1: 107-135.

Kimpton-Nye, Samuel. 2021. Reconsidering the Dispositional Essentialist Canon. *Philosophical Studies* 178, no. 10: 3421-3441.

Kovacs, David Mark. 2020. The oldest solution to the circularity problem for Humeanism about the laws of nature. *Synthese* 198, no. 9: 1-21.

Ladyman, James. 2016. Structural Realism. In *The Stanford Encyclopedia of Philosophy* (Winter 2016 Edition), edited by Edward N. Zalta. https://plato.stanford.edu/archives/win2016/entries/structural-realism.

Lange, Marc. 2013. Grounding, scientific explanation, and Humean laws. *Philosophical Studies* 164, no. 1: 255-261.

Lange, Marc. 2018. Transitivity, self-explanation, and the explanatory circularity argument against Humean accounts of natural law. *Synthese* 195, no. 3: 1337-1353.

Langsam, Harold. 2011. *The Wonder of Consciousness: Understanding the Mind Through Philosophical Reflection*. MIT Press, 2011.

Langton, Rae. 2001. *Kantian Humility: Our Ignorance of Things in Themselves*. Oxford University Press.

Langton, Rae. 2004. Elusive Knowledge of Things in Themselves. *Australasian Journal of Philosophy* 82, no. 1: 129–136.

Lewis, David. 1983. *Philosophical Papers Vol. 1*. Oxford University Press.

Lewis, David. 1986a. *On the Plurality of Worlds*. Basil Blackwell.

Lewis, David. 1986b. *Philosophical Papers Vol. II*. Oxford University Press.

Lewis, David. 1988. Rearrangement of particles: reply to Lowe. *Analysis* 48, no. 2: 65-72

Lewis, David. 1992. Armstrong on Combinatorial Possibility. *Australasian Journal of Philosophy* 70: 211-224.

Lewis, David. 2009. Ramseyan Humility. In *Conceptual Analysis and Philosophical Naturalism*, edited by David Braddon-Mithcell and Robert Nola, p. 203-222. Cambridge: MIT Press.

Magidor, Ofra. 2016. Endurantism vs. Perdurantism?: A Debate Reconsidered. *Noûs* 50, no. 3: 509-532.

Martin, C. B. 2008. *The Mind in Nature*. Oxford: Oxford University Press.

Maudlin, Tim. 2007. *The Metaphysics Within Physics*. Oxford University Press.

Maudlin, Tim. 2018. Ontological Clarity via Canonical Presentation: Electromagnetism and the Aharonov-Bohm Effect. *Entropy* 20, no. 6: 465.

Mellor, D.H. 1981. *Real Time*. London: Routledge.

Merricks, Trenton. 1994. Endurance and Indiscernibility. *Journal of Philosophy* 91, no. 4: 165-184.

Miller, Kristie. 2004. Enduring Special Relativity. *Southern Journal of Philosophy* 42, no. 3: 349-370.

Monton, Bradley. 2006. Presentism and Quantum Gravity. In *The Ontology of Spacetime*, edited by Dennis Dieks, p. 263-280. Amsterdam: Elsevier.

Mørch, Hedda Hassel. 2014. *Panpsychism and Causation: A New Argument and a Solution to the Combination Problem*. PhD Thesis, Oslo.

Mørch, Hedda Hassel. 2018a. Does Dispositionalism Entail Panpsychism? *Topoi* 39, no. 5: 1073-1088.

Mørch, Hedda Hassel. 2018b. The Evolutionary Argument for Phenomenal Powers. *Philosophical Perspectives*: 293–316.

Mørch, Hedda Hassel. 2019. The Argument for Panpsychism From Experience of Causation. In *The Routledge Handbook of Panpsychism*, edited by William Seager. Routledge.

Mumford, Stephen. 2004. *Laws in Nature*. Routledge.

Mumford, Stephen. 2009. Powers and persistence. In *Unity and Time in Metaphysics*, edited by Ludger Honnefelder, Edmund Runggaldier, and Benedikt Schick, 223-236. De Gruyter.

Ney, Alyssa. 2021. *The World in the Wave Function: A Metaphysics for Quantum Physics*. New York: Oxford University Press.

Oderberg, David. 1993. *The Metaphysics of Identity over Time*. New York: St. Martin's Press.

Russell, Bertrand. 1927. *The Analysis of Matter*. London: Kegan Paul.

Schaffer, Jonathan. 2007. From Nihilism to Monism. *Australasian Journal of Philosophy* 85, no. 2: 175–191.

Schaffer, Jonathan.. 2010a. Monism: The Priority of the Whole. *Philosophical Review* 119, no. 1: 31–76.

Schaffer, Jonathan. 2010b. The Internal Relatedness of All Things. *Mind* 119, no. 474: 341–376.

Schaffer, Jonathan. 2010c. The Least Discerning and Most Promiscuous Truthmaker. *Philosophical Quarterly* 60: 307–324.

Schaffer, Jonathan. 2013. The Action of the Whole. *Aristotelian Society Supplementary Volume* 87, no. 1: 67-87.

Schaffer, Jonathan. 2017. The Ground Between the Gaps. *Philosophers' Imprint* 17: 1-26.

Segal, Aaron. 2016. A Puzzle About Points. *Philosophical Perspectives* 30, no. 1: 349-365.

Shumener, Erica. 2019. Laws of Nature, Explanation, and Semantic Circularity. *British Journal for the Philosophy of Science* 70, no. 3: 787-815.

Sider, Theodore. 2001. *Four Dimensionalism: An Ontology of Persistence and Time*. Oxford University Press.

Sider, Theodore. 2008. Temporal Parts. In *Contemporary Debates in Metaphysics*, edited by Theodore Sider, John Hawthorne, and Dean Zimmerman, p. 241-262. Blackwell.

Sider, Theodore. 2011. *Writing the Book of the World*. Oxford: Oxford University Press.

Shoemaker, Sydney. 1980. Causality and Properties. In *Time and Cause*, edited by Peter van Inwagen, 109–35. Springer

Strawson, Galen. 2006. Realistic Monism - Why Physicalism Entails Panpsychism. *Journal of Consciousness Studies* 13, no. 10–11: 3–31.

Strawson, Galen. 2008. The Identity of the Categorical and the Dispositional. *Analysis* 68, no. 4: 271-282.

Strawson, Galen. 2014. *The Secret Connexion: Causation, Realism, and David Hume: Revised Edition*. Oxford University Press UK.

Taylor, Henry. 2018. Powerful qualities and pure powers. *Philosophical Studies* 175, no. 6: 1423-1440.

Tooley, Michael. 1977. The Nature of Laws. *Canadian Journal of Philosophy* 7, no. 4: 667–98.

Tugby, Matthew. 2021. Grounding Theories of Powers. *Synthese* 198, no. 12: 11187-11216.

Tugby, Matthew. 2022. *Putting Properties First*. Oxford University Press.

Van Fraassen, Bas. 1989. *Laws and Symmetry*. Oxford University Press.

Williams, Neil. 2019. *The Powers Metaphysic*. Oxford University Press.

Wilson, Jessica. 2009. Resemblance-based resources for reductive singularism (or: How to be a Humean singularist about causation). *The Monist* 92, no. 1: 153-190.

Wilson, Jessica. 2010. What Is Hume's Dictum, and Why Believe It? *Philosophy and Phenomenological Research* 80, no. 3: 595-637.

Wilson, Jessica. 2015. Hume's Dictum and metaphysical modality: Lewis's combinatorialism. In *The Blackwell Companion to David Lewis*, edited by Barry Loewer and Jonathan Schaffer, p. 138-158. Oxford: Blackwell.

Zimmerman, Dean. 1998. Temporary Intrinsics and Presentism. In *Metaphysics: The Big Questions*, edited by Peter van Inwagen and Dean Zimmrman, p. 206-219. Malden, MA: Blackwell.