Powerful Qualities for Strongly Emergent Mental Properties

Abstract. Powers-based accounts of emergence offer a promising framework to elucidate the claim that mental properties are entities over and above physical properties. However, strong emergentists are also committed to the distinctness in kind of mental properties as compared to physical ones. Therefore, every satisfactory account of strongly emergent mental properties ought to preserve such a commitment. My aim is to show that a conception of properties as powerful qualities offers a unified strategy to accomplish this aim. I will begin by illustrating powers-based accounts of strong emergence. Then I will argue that a powerful qualities-based account is preferable to two standard options that other powers-based accounts can invoke to capture the distinctness in kind of mental properties, which I call the via negativa strategy and the anti-materialist strategy. My conclusion will be that a conception of powerful qualities is a natural ally for the proponent of strongly emergent mental properties.

1. Introduction

Under the banner of strong emergence, there is a family of diverse views. My focus will be on powers-based accounts of ontological emergence (PA for short) (O’Connor 1994; O’Connor and Wong 2005; Anjum and Mumford 2017; Wilson 2016; Yates 2016). At heart, any version of PA holds that a higher-level entity H is something which is over above a lower-level physical entity L on which it synchronically depends just in case (i) H is ontologically distinct from L, and (ii) H is distinctively causally efficacious as compared to L.
The idea of strongly emergent entities is often met with suspicion. The merit of PA is to regiment the condition under which a property strongly emerges from another one. Thus PA represents a promising framework for the view that mental properties are strongly emergent as compared to physical ones. However, strong emergentists are typically committed to the claim that mental properties are distinct in kind as compared to physical properties (MacDonald and MacDonald 2010, pp. 9–15; O’Connor and Churchill 2010).

There are different ways to elucidate the claim of distinctness in kind. Despite specific differences, the core idea is that belonging to a certain kind is a matter of qualitative similarity (Ellis 2001, p. 68–76). Accordingly, things that have similar qualitativity belong to the same kind and, thereby, things that have dissimilar qualitativity belong to distinct kinds. Qualitativity is a matter of how something is like by virtue of having certain properties. Arguably, qualitatively similar properties make a similar contribution to objects that instantiate them. One of the aims of this paper is to formulate in a rigorous way a condition for the distinctness in kind among properties in terms of their qualitativity.

I will not attempt to reconstruct the reasons and arguments that ground strong emergentism about mental properties. Nor shall I attempt to demarcate the boundary between the mental and the physical. My target is a different one: it goes without saying that strong emergentists who embrace the distinctness in kind between mental and physical properties are committed to preserve it. Therefore, we can assume that every satisfactory account of strongly emergent properties should preserve it too. As it will become clear in due course, PA alone does not guarantee that. Thus PA must be
supplemented with a criterion to capture the distinctness in kind of mental properties as compared to physical ones.

My aim is to show that a powerful qualities-based account (PQA for short) of ontological emergence is ideally suited to accomplish this aim. In articulating PQA, I will corroborate further the applicability of an ontology of powerful qualities to issues in the philosophy of mind. To my knowledge, how powerful qualities and strong emergence can be bridged is a question which received no attention in the literature. Therefore, by developing and defending PQA, I will make an original contribution with respect to the applications of powerful qualities that can be found in the literature (Heil 2003; 2012; Martin 2008; Jacobs 2012; Taylor 2013; Carruth 2016; Jaworski 2016).

I will make my case by showing how PQA evades the shortcomings of two standard strategies that are available to other powers-based accounts for capturing the distinctness in kind between mental and physical properties: the via negativa strategy and the anti-materialist strategy. As I will explain in detail in Section 3, the former is to define mental properties as non-physical. The latter is to invoke classic anti-materialist arguments to show that mental properties are distinct in kind as compared to physical ones. Since it escapes the shortcomings of these strategies, I will argue that PQA is preferable.

PQA can claim another important advantage: it does not force us to reject a broadly naturalistic outlook of reality. As I will explain in due course, PQA is naturalistic because it is compatible with naturalism; it is a form of dualism because if mental properties satisfy PQA’s condition of strong emergence, then they are ontologically over and above physical ones.
As I shall understand it, naturalism is the doctrine that everything that exists is a consequence of a network of basic properties and laws and is compatible with all the results of contemporary science (Chalmers 1996, pp. 127–128). Naturalism and physicalism, the doctrine that everything is physical, are often conflated (e.g. Montero and Papineau 2016). In order to appreciate PQA, it is crucial to keep them separated. One can be a naturalist without being a physicalist (cf. Chalmers 1996, p. 129). As I will argue, PQA appears to be in the ballpark of what David Chalmers (1996) calls *naturalistic dualism*.

Here is the plan. In the remainder of this section I will lay out some preliminary remarks. In Section 2 I will articulate more precisely PA and its commitments. In Section 3 I will elaborate the claim that PA should be integrated with a criterion for the distinctness in kind of mental properties as compared to physical ones. In Section 4, I will discuss the via negativa strategy and the anti-materialist strategy. However, I will argue that these alternatives are problematic. We should therefore explore a different approach. In Section 5, I discuss that adoption of a conception of mental and physical properties as *powerful qualities* (Heil 2003, 2012; Martin 2008). Here I will illustrate PQA and its merits with respect to the case of strongly emergent mental properties. My aim is to show that the adoption of PQA, a powerful qualities-based account of ontological emergence, offers a promising framework for capturing the distinctness in kind of mental properties as compared to physical ones. In particular, I will argue that the proposed account is preferable to supplementing other powers-based account with the via negativa strategy and the anti-materialist strategy (Section 4).
Some preliminary assumptions are needed. It may be that the merits of PQA extend to other kinds of properties or entities. However, I will not explore this possibility. Relatedly, I assume that the notion of strong emergence is intelligible. Therefore, I will ignore worries concerning its plausibility.

Second, I shall concentrate on an ontological conception of emergence rather than an epistemological one. The former is a distinctive metaphysical relation which concerns the nature of worldly entities (Wilson 2016); the latter is a cognitive explanatory relation which concerns the limits of our knowledge of complex systems (Bedau 1977).

Third, I shall ignore the question of how to best understand the relation of synchronic dependence. PA is suitable for various candidates which include composition, supervenience, causal dependence, realization and perhaps grounding (see Wilson 2009 and Wilson 2011 for an overview).

Fourth, I shall restrict my attention to articulate and defend PQA (Heil 2003, 2012; Martin 2008). Therefore, I will not explore how PA can be articulated from the viewpoint of other conceptions of properties. For example, it is possible to articulate a powers-based account from the viewpoint of a conception of categorical properties (e.g. Armstrong 1997) or dispositional ones (e.g. Bird 2007). PA is suitable for either conception (Wilson 2016, pp. 354–356). I will not compare these views and PQA. This would be the topic of a separate investigation. To stress, my aim is a different one, namely it is to show that PQA is preferable to powers-based views that capture the qualitative distinctness of mental properties by adopting the via negativa strategy of the anti-materialist strategy.
Lastly, my conclusion is not that mental properties are strongly emergent properties. Nor is that the powerful qualities view commits us to strongly emergent mental properties. My conclusion is rather that a conception of powerful qualities offers the strong emergentist a promising and unified account to capture the over and above-ness and distinctness in kind of mental properties as compared to physical ones. To stress, it is not my claim that powerful qualities theorists are or ought to be strongly emergentists. As it happens, advocates of powerful qualities spurn a robust ontological distinction between kinds of properties (e.g. Heil 2003). Here I do not wish to persuade them otherwise. The sell targets a different audience: PQA is a promising framework for those strong emergentists who wish to regiment the claim that mental and physical properties are distinct in kind.

2. Powers-based Accounts of Ontological Emergence

Strong emergentism is motivated by the idea that some higher-level properties are (i) ontologically distinct and (ii) distinctively causally efficacious as compared to the lower-level physical entities on which they depend. Powers-based Accounts of ontological emergence (PA) specify (i) and (ii) in terms of their causal powers, or powers (for short). To illustrate PA, firstly we need to clarify what the powers of properties are.

For present purposes, to say that a property has some power or powers is a convenient shorthand for referring to the ways in which the possession of a property contributes to the dispositions of a thing that has such a property. For example, by being charged, a particle is disposed to produce electromagnetic fields. To say that charge has the power to produce electromagnetic fields is a shorthand for saying that
the possession of charge disposes a bearer, say a particle, to produce electromagnetic fields.

The idea that properties have powers (in the previous sense) presupposes that they empower their bearer in a distinctive fashion (Shoemaker 1980; Ellis 2001; Mumford 2004; Bird 2007): by having a property, a bearer is disposed to bring about a characteristic manifestation in a characteristic circumstance. A classic example of a powerful property is charge: by being charged, a particle is disposed to produce electric force when it interacts with other particles.

Here we can remain neutral with respect to two important, but independent questions: first, whether or not a property is necessarily linked with certain powers (for examples of contrasting views, see Bird 2007 and Lewis 1986); second, whether or not powerful properties are single-track or multi-track, namely whether a property has more than a single type of manifestation in more than a single type of circumstance (Bird 2007, pp. 21–24; Vetter 2013). This general characterization suffices for illustrating PA: it is sufficient to assume that PA has the theoretical resources for making sense of the claim that properties empower, in the previous sense, their bearers.

Versions of PA differ greatly (see Wilson 2016 for an overview). In spite of specific differences, every version of PA is committed to the idea that the ontological distinctness and distinctive causal efficacy of strongly emergent properties is best understood in terms of novelty of their powers (O’Connor 1994; O’Connor and Wong 2005; Anjum and Mumford 2016; Wilson 2016; Yates 2016; Baysan and Wilson 2017). Jessica Wilson captures this idea more precisely in what she calls New Power Condition (2016, p. 356).
New Power Condition: token higher-level feature S has, on a given occasion, at least one token power not identical with any token power of the token lower-level feature P on which S synchronically depends, on that occasion.

If a property, or feature, S satisfies the New Power Condition, then (i) S is ontologically distinct from P by Leibniz’s Law, and (ii) S is distinctively causally efficacious with respect to P because S has a different power-profile. Leibniz’s Law states that entities x and y are identical if every predicate that applies to x also applies to y, and vice versa. If S has a token power not identical with any token power of P, then there is a predicate that applies to S but not P (namely, that S has a certain power to ϕ which P lacks). Therefore, S and P are distinct. For example, if the hardness of a diamond has the power to scratch glass and this power is not identical with any power of its constituent carbon atoms, then the predicate has the power to scratch glass applies only to the diamond’s hardness. Given the New Power Condition, the diamonds hardness is therefore ontologically distinct from the properties of the diamond’s constituent carbon atoms. By having the power to scratch glass, the hardness also contributes to the power-profile of the diamond in a distinctive way as compared to the contribution of its constituent carbon atoms.

The New Power Condition can be embedded in two schemata for emergence: weak and strong (Wilson 2016, p. 362).

Strong Emergence: token higher-level feature S is strongly metaphysically emergent from token lower-level feature P, on a given occasion, if and only if (1) S
synchronously depends on P on that occasion; and (2) S has at least one
token power not identical with any token power of P on that occasion.

*Weak Emergence:* token higher-level feature S is weakly metaphysically emergent
from token lower-level feature P on a given occasion if and only if (1) S
synchronously depends on P on that occasion; and (2) S has a non-empty
proper subset of the token powers had by P on that occasion.

Since my focus is on PA, I shall restrict the attention to *Strong Emergence*. Note that
Wilsons formulation requires an immediate amendment for it makes strong emergence
trivial (Yates 2016, pp. 813–814). If we were to compare a diamonds hardness with an
individual property of its constituent carbon atoms, it would be trivially strongly
emergent: no individual carbon atom has the power to scratch glass. Rather the
hardness of a diamond synchronically depends on a collection of carbon atoms
arranged diamond-wise (Gillett 2002, p. 319). In asking whether a diamonds hardness
satisfies *Strong Emergence*, we have to compare the powers of its hardness with the
powers of the collection of its constituent carbon atoms arranged diamond-wise. We
can maintain Wilsons schemata of *Strong Emergence* and *Weak Emergence* by stipulating
that P denotes a physical property or a collection of physical properties. The
amendment is necessary, but it makes it more difficult to ascertain cases of emergence.
In what follows, I will assume that the examples offered are at least plausible candidates
of strongly emergent properties.

3. Ontological Distinctness and Distinctness in Kind
Every version of PA is committed to Strong Emergence or something in the vicinity. The schema offers a necessary and sufficient condition for strongly emergent properties. It is therefore a serviceable tool. However, it is silent with respect to the kind of the strongly emergent property. It is therefore possible that a property S synchronically depends on a physical property P, S has at least a token power that is not identical with any token power of P, and yet both P and S are physical properties. In what follows, I will argue that such an insensitivity represents a limitation for articulating a satisfactory account of strongly emergent mental properties from the viewpoint of PA.

As I shall understand it, strong emergentism about mental properties is committed to the following theses or something akin (Chalmers 1996, pp. 129–130; pp. 378–379; 2010, pp. 126–130; MacDonald and MacDonald 2010, pp. 9–15; OConnor and Churchill 2010).

- **Distinctness**: for every type mental property M and for every type physical property P, M and P are distinct in kind.

- **Qualitative Irreducibility**: for every type mental property M, there is at least a qualitative feature of M that cannot be reduced to any feature of any type physical property P.

- **Synchronic Dependence**: for every type mental property M, there is a type physical property P such that on a given occasion M synchronically depends on P on that occasion.
Over and above-ness: for every type mental property M and for every type physical property P, if M synchronically depends on P on a given occasion, then (i) M is ontologically distinct from P, and (ii) M is distinctively causally efficacious as compared to P on that occasion.

My aim is not to defend such theses. Nor is it to persuade the reader to embrace them. Rather my aim is to show that the adoption of a conception of properties as powerful qualities (Heil 2003, 2012; Martin 2008) offers a unified framework for capturing them. The most significant advantage of this approach, I will contend, is to accommodate Distinctness in a preferable way to two standard strategies for doing so that the advocate of PA can adopt. But let us proceed with order.

If strong emergentism about mental properties is adequately represented as the view committed to Distinctness, Qualitative Irreducibility, Synchronic Dependence, and Over and above-ness, then it is reasonable to believe that any satisfactory account of strongly emergent mental properties should capture this commitment. However, the formulation of Strong Emergence captures only Synchronic Dependence and Over and above-ness. So we need to supplement PA with a criterion or strategy to accommodate Distinctness and Qualitative Irreducibility.

For present purposes, we do not need to define the notion of a mental property. It is sufficient to characterize mental properties as those instantiated during conscious experiences such as sensations, beliefs, memories, perceptions, emotions, and so on. A distinctive feature of mental properties is the ‘what it is like’-ness to have them. There is something it is like recall a fond memory, to feel pain, or to see a red rose. As
Chalmers puts it, ‘for any distinctive kind of conscious experience, there will be a corresponding phenomenal [mental] property: in essence, the property of having a conscious experience of that kind’ (2010: p. 67). Notice that this characterization does not require any substantive commitments about the nature of mental properties.

Typically, Distinctness and Qualitative Irreducibility (or something akin) constitute the fulcrum of any anti-physicalist views about the mental. To spell out precisely what motivates such theses is a difficult task. Perhaps, as David Papineau (2002) suggests, it is the strong intuition that there is something about the mental that evades any physical explanation. Notice that Distinctness and Qualitative Irreducibility are related, but independent theses. There are various ways to unpack the distinctness in kind of mental properties as compared to physical ones. For present purpose, it suffices to note that strong emergentists who embrace Qualitative Irreducibility hold that there is something qualitatively irreducible to any feature of physical properties. More precisely, we could say that there is at least a qualitative feature of mental properties that is irreducible to any qualitative features of physical properties. A clarification of Qualitative Irreducibility demands a short digression on the notion of qualitativity.

There is no consensus on how to define the qualitative (see Ingthorsson 2013 for an overview). At first approximation, qualitativity is a matter of how a thing is like. In turn, how a thing is like depends on its qualities. For example, John Heil says that the ‘ways things are are qualities’ (2010, p. 70). In similar vein, Galen Strawson, who favours the term ‘categorical’ over ‘qualitative’, claims that: ‘[a]ll being is categorical because thats what it is to be!’ (2008, p. 278). These remarks may not illuminate the notion. However, they avoid a negative characterization of qualitativity. In fact, qualities are often thought of as properties that are non-dispositional, non-modal,
lacking a dispositional essence, non-powerful (Armstrong 1997, 2005; Bird 2007, pp. 66–67; Ellis 2002, pp. 68–70). But such a conception is problematic for it prevents a conception of powerful qualities to take off the ground: if one defines qualities as non-dispositional, then properties cannot be simultaneously dispositional and qualitative—as powerful qualities theorists hold (Heil 2003, 2012; Martin 2008; I will return to the powerful qualities view in Section 4). Since the purpose of this paper is to outline a powerful qualities-based account (PQA) of strongly emergent mental properties, we must adopt a different conception of qualities. It is worth noting that there are independent reasons for rejecting the mutual exclusivity of qualitativity and dispositionality (Ford 2012; Ingthorsson 2013; Martin and Heil 1999). For space reasons, it is not possible to examine them. However, this elucidation allows us to escape the objection that a positive conception of qualitativity is an *ad-hoc* attempt to defend PQA.

Another promising conception of qualities, which also evades the mutual exclusivity of the qualitative and the dispositional, is that of Jonathan Jacobs (2011). He takes qualities to be different from each other (not merely numerically) by virtue of their nature (Jacobs 2011, p. 90). If we adopt such a view, then *Qualitative Irreducibility* can be interpreted as the thesis that the nature of type mental properties is such that they possess at least a qualitative feature which is irreducible to any type physical property. Here talk of qualitative features is a shorthand for the contributions the possession of a property makes to how a bearer is like. To put it differently, we can think of qualitative features as contributing to the various ways a thing is like by virtue of having a certain property. Accordingly, two properties having different qualitative
features must be distinct with respect to how the contribute to the qualitativity of their bearers. This seems to capture the core idea of qualitativity.

Another important clarification before moving on: it is somewhat customary to take the ‘what it is like’-ness, or phenomenal character of experience to be a paradigmatic qualitative feature of mental properties. However, as Alexander Carruth (2016) notes, we should not presuppose that all qualitative features of mental properties are responsible for the phenomenal character of conscious experience. According to the adopted conception of qualitativity, having certain qualitative features is not a privilege of mental properties only. It is therefore possible that many non-phenomenal qualitative features of mental properties are reducible to features of physical properties.

Thus far I have clarified strong emergentism about mental properties. I will now turn to discuss two standard and seemingly attractive strategies to capture the distinctness in kind of mental properties from the viewpoint of PA: the via negativa strategy and the anti-materialist strategy.

4. The Via Negativa Strategy and the Anti-Materialist Strategy

The via negativa strategy consists in adopting a definition of mental properties as non-physical. This is a straightforward way to secure Distinctness. The anti-materialist strategy invokes some standard arguments against the view that mental properties are reducible to physical ones to establish Qualitative Irreducibility for establishing Distinctness. Despite the initial plausibility, however, both strategies are unlovely.

Let us consider the via negativa strategy. If we define mental properties as non-physical, then the worry about PA vanishes. The simplicity of this strategy makes it an
appealing option. But on closer inspection, the via negatīva strategy is problematic for at least three reasons:

(i) It blocks by stipulation the possibility that some version of identity physicalism is true, the view that every mental property is identical with some physical property (Place 1956; Smart 1959; Lewis 1994). Of course, if a mental property satisfies *Strong Emergence*, then it is not identical with a physical one. But if we take identity physicalism to be a live possibility, then our characterization of mental properties should not be cast in opposition to physical properties. Here I acknowledge that the prospect of blocking a priori identity physicalism delights some anti-physicalists. However, the adoption of PA does not force us to follow this route;

(ii) A characterization of mental properties in negative terms does not offer any positive insight on the nature of mental properties. Therefore, it should be avoided if possible;

(iii) If mental properties are non-physical, then arguably they cannot be regarded as a ‘consequence of a network of basic properties and laws’ (Chalmers 1996, pp. 127–128). But if so, taking mental properties as non-physical would clash with a commitment to naturalism. For instance, Chalmers takes the mental property of being conscious as a paradigmatic example of strongly emergent property which violates a
broadly naturalistic outlook of nature (2006; 2010, pp. 104–105). Yet it is a philosophical prejudice to think that strongly emergent properties must be naturalistically unacceptable entities. For example, the properties of a quantum state of entangled particles are candidate strongly emergent properties and yet are clearly naturalistically acceptable (Humphreys 1997). Another example: it might well be that the property of having a certain molecular structure is strongly emergent from quantum mechanical properties of systems of nuclei and electrons interacting via Coulombs forces (Hendry 2006; 2010). It is desirable that mental properties may be strongly emergent in accordance to Strong Emergence and yet compatible with a broadly naturalistic outlook of nature. We should therefore explore a strategy that leaves open such a possibility.

The anti-materialist strategy is more promising but faces other worries. The idea is to preserve the formulation of Strong Emergence and then appeal to some standard arguments against what Chalmers (2010) calls type-A materialism, the view that all mental properties are reducible to physical ones. While they differ in detail, type-A materialist views oppose the very idea that mental properties are ontologically over and above physical ones (Chalmers 2010, p. 111). There are three standard arguments against type-A materialism: the Explanatory Gap Argument (Levine 1983), the Conceivability
Argument (Chalmers 1996), and the Knowledge Argument (Jackson 1982). Here I shall not attempt to reconstruct these arguments for two reasons: first, they are well known; second, an adequate discussion of these arguments would require more space than it is possible to allocate in this paper. In a nutshell, the anti-materialist strategy captures Distinctness by defending Qualitative Irreducibility.

The main problem with this strategy is that the soundness of the previous arguments is far from being the orthodox view. Therefore, the anti-materialist strategy

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1 It is worth noting that Levine (1983) takes the Explanatory Gap Argument to be epistemological and not ontological.

2 For instance, the Explanatory Gap Argument does not exclude that mental properties can be partially explained in terms of structure and function. A type-A materialist would claim that there is nothing left to be explained about mental properties (Dennett 2001). The Conceivability Argument appeals to the metaphysical possibility of zombies—entities that are physically identical and behaviourally indistinguishable to conscious beings but that lacks any conscious mental properties (Chalmers 1996). Against it, some philosophers claim that we cannot really conceive of zombies (e.g. Dennett 1995). Others deny that zombie are metaphysically possible (e.g. Heil 2003). Further others call into question the link between the conceivability of zombies and their possibility (e.g. Block and Stalnaker 1999; Hill and McLaughlin 1999). The Knowledge Argument faces worries too. This argument is illustrated with the famous thought experiment of Mary the neuroscientist (Jackson 1982). Some opponents raise doubts concerning the thought experiment itself (e.g. Dennett 1991). Others claim that Mary does not learn a genuine new fact. Rather she learns a new way of conceptualizing
does not secure Distinctness. Strong emergentists should favour rest their view on arguments for the falsity of type-A materialism.

Another problem with the anti-materialist strategy is that privileges an anti-naturalistic conception of strong emergence. The distinctness in kind is ensured by establishing that mental properties are irreducibly non-physical. The irreducibility in question underlies the very idea that something about the nature of mental properties eludes the realm of science. Again, we should leave open the possibility that mental properties are strongly emergent and yet acceptable from a broadly naturalistic viewpoint.

Overall, it seems that both the via negativa and the anti-materialist strategies are less attractive than one might initially suppose. We should therefore investigate an alternative approach.

5. A Powerful Qualities-based Account of Strong Emergence

Does PA-strong emergentist have a better way to secure Distinctness without facing the worries raised by the via negativa and anti-materialist strategies? My answer is positive: by adopting powerful qualities-based account for strongly emergent mental properties (PQA for short), we can capture the commitments of strong emergentists about mental properties in a unified way and escapes the shortcomings of the via negativa strategy and the anti-materialist strategy (Section 4).

some already known physical fact (e.g. Papineau 2002) or new abilities such as remembering, imagining, recognizing the ‘what it is like’-ness to experience colours (Lewis 1990).
PQA has the merit of integrating a criterion for the distinctness in kind of properties in the formulation of *Strong Emergence*. Therefore, if we adopt PQA, we do not need to follow the via negativa or the anti-materialist strategy (Section 4). A desirable advantage is that PQA is compatible with a broadly naturalistic outlook of strong emergence. That is, mental properties can be strongly emergent in accordance to PQA and yet their existence does not clash with the view that everything that exists is a ‘consequence of a network of basic properties and laws’ and ‘compatible with all the results of contemporary science’ (Chalmers 1996, pp. 127–128).

As I shall understand it, the powerful qualities view holds that ‘every property is at once dispositional and qualitative’ (Martin and Heil 1999, p. 46), or a powerful quality. Here it is useful to repeat that a property’s dispositionality is a matter of the powers a thing has by possessing such a property; a property’s qualitativity is a matter of its contribution to how a thing is like by having such a property (Section 2).

A powerful quality empowers a bearer in a distinctive way and, at the same time, contributes to how that bearer is like. As Martin and Heil put it, ‘in virtue of possessing a property, an object possesses both a particular dispositionality and a particular qualitative character’ (1999, pp. 45–46). Call dispositional features the ways in which the possession of a powerful quality empowers a bearer. Call qualitative features the ways the possession of a powerful quality contributes to the qualitative character of a bearer, or its make-up. Now we can define the notion of a powerful quality as follows.

*Powerful Quality:* a property P is a powerful quality if and only if P has dispositional and qualitative features.
It is worth noting that this definition does not entail that the dispositional and qualitative features constitute an addition to being with respect to a powerful quality. To say that a powerful quality P has dispositional and qualitative features is a shorthand for saying that by possessing P, a bearer has certain powers and P qualitatively contributes to how that bearer is like. This is a relevant qualification for powerful qualities are not ‘compounds’ of dispositional and qualitative parts understood in an ontologically robust sense (Heil 2003, p. 119–120). While a compound view is an available option (e.g. Taylor 2018), it is not what powerful qualities theorists have in mind. It is worth noting that the formulation of Powerful Quality does not require any substantive commitments on the relation between the dispositional and the qualitative features.3 This leaves open the possibility to spell out the relation between dispositional and qualitative features in a number of distinct ways.

PQA is not available to everyone. It is not available to the pure powers theorist who holds that properties lack any qualitative features (e.g. Bird 2007). Similarly, it is not available to the pure qualities theorist who holds that properties lack genuine dispositional features (e.g. Lewis 1986). Presumably, both the pure powers theorists

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3 In its canonical version, the powerful qualities view holds that a property’s dispositionality and its qualitativity are identical (Heil 2003, p. 111). This version is known as the Identity Theory of powers (Heil 2003; Martin 2008; Strawson 2008; Taylor 2013; Carruth 2016; Jaworski 2016). PQA does not force us to embrace the identity between dispositionality and qualitativity (e.g. Giannotti 2019). The discussion of merits and demerits of the Identity Theory goes beyond the scope of this paper.
and the pure qualities theorist would adopt the via negativa strategy or the anti-materialist strategy to capture *Distinctness* and *Qualitative Irreducibility*. Both strategies, I have already argued, are unlovely (Section 3). Relatedly, we must distinguish PQA from views according to which properties have dispositional and qualitative features, but not in virtue of their nature. Powerful qualities have a peculiar nature it is in virtue of its ‘dual nature’ that a powerful quality has dispositional features and qualitative ones (Martin and Heil 1999, p. 45; Martin 2008, p. 44).

It is worth stressing that PQA is not a dualist view according to which there are powers and qualities. A powerful quality is a single, unitary property with dispositional and qualitative features, or aspects (Giannotti 2019). Therefore, we must distinguish PQA from dualist views that posit both powers and qualities. Of course, a dualist of this sort might have the theoretical resources for capturing *Distinctness* in some other way. But the resulting view would be less parsimonious than PQA. Therefore, PQA would be a preferable option.

PQA requires the adoption of a conception of physical and mental properties as powerful qualities. Namely, we have to accept that physical and mental properties empower their bearers in some distinctive ways and, simultaneously, contribute to their make-up. Is this plausible? It seems so.

Of course, powerful qualities theorists can argue that it is a consequence of their view that mental and physical properties are powerful qualities. If *all* properties are powerful qualities, then mental and physical properties are powerful qualities too. However, one might worry that this would make PQA hanging on the truth of the powerful qualities view. While there are independent reasons for thinking that the powerful qualities view is in fact true (Heil 2012), the tenability of PQA demands the
more modest commitment to a conception of physical and mental properties as powerful qualities. It is therefore useful to consider other motivations for believing in physical and mental powerful qualities.

A conception of powerful qualities is well-suited to capturing the idea that physical properties empowers their bearers (Ellis 2001; Mumford 2006). It gives us an ontological ground for the causal contributions that the possession of physical properties makes. Think of charge and mass: by being charged, a particle is disposed to exert a force in accordance to Coulomb’s Law; by being massive, a particle is disposed to generate a force in accordance to Newton’s Law. By adopting this conception, we can hold that a particle has the power to exert a force in accordance to Coulomb’s Law by virtue of charge’s dispositionality. In same vein, we can say that a particle has the power to generate a force in accordance to Newton’s Law by virtue of mass’ dispositionality.

Let us now consider the qualitativity of physical properties. Recall that qualitativity is a matter of how something is like; the qualitative features are the various ways the possession of a property contributes to how a bearer is like. By conceiving of physical properties as powerful qualities, we can accommodate the manifest fact that possessing certain physical properties is a matter of how something is like. By being massive, a particle has a certain quantity of matter that can be measured in kilograms. By being charged, a particle has a certain quantity of charge that can be measured in coulombs. And so on. Once again, recall that this notion of qualitativity should not be confused with the qualitativity of conscious experience (Section 3). The reader should not fear: PQA does not commit us to a version of panpsychism. PQA does not imply
that charge contributes to the phenomenal character of a bearer as the property of being in pain does.

Now let us focus on mental properties. Is it plausible to think of them as powerful qualities? Also in this case, it seems so. Qualitativity is simply a matter of contributing to how a bearer is like. The possession of mental properties does contribute to the qualitative character of bearers: having a certain mental property is a matter of how someone is like during a certain experience. In this sense, mental properties are qualitative. An example will clarify. Suppose that Calam burns his hand with a hot pan. He instantiates the mental property of being in pain. This property qualitatively contributes to how Calam is like during such an experience. Namely, having the property of being in pain is a matter of how Calam is like during that experience. The qualitativity of mental properties of conscious experience is typically associated with the phenomenal character, or ‘what is it like’-ness to have them. However, this is not the qualitativity that powerful qualities theorists have in mind when they claim that all properties are at once dispositional and qualitative. To repeat, a property’s qualitativity is a matter of its contribution to how a bearer is like (Martin and Heil 1999, pp. 45–46). Note that PQA does not force us to deny the ‘what it is like’-ness of having certain mental properties. To use the previous example, being in pain qualitative contributes to Calam and there is something it is like for Calam to be in pain. So it seems that if a mental property contributes to the phenomenal character of a bearer, then it also contributes to that bearers qualitative character. However, the opposite does not hold: not all qualitative properties contribute to the phenomenal character of a bearer.
What about the dispositionality of mental properties? PQA demands that the mental property of being in pain empowers Calam in some way or other. A straightforward strategy to defending the dispositionality of mental properties is to combine the powerful qualities view with physicalism (e.g. Heil 2003, pp. 233–235; Taylor 2013, p. 99; Robb 2017, p. 212). However, this strategy is not available for the advocate of PQA who aims to preserve the commitments of strong emergentism about mental properties. This is because such a strategy requires the rejection of Distinctness. Fortunately, there are at least two other reasons for believing in the dispositionality of mental properties: first, it allows us to accommodate the overwhelming intuition that mental properties are causally efficacious; second, and relatedly, it offers an ontological ground for the idea that mental properties are causally efficacious qua mental (cf. Wilson 2009; Robb 2017). Consider once again Calam who burns her hand with a hot pan. Suppose that the mental property of being in pain is a powerful quality. If so, we could argue that Calam is disposed to entertain certain beliefs about that experience (for example, that such an experience is unpleasant) by virtue of the mental property of being in pain as such rather than by virtue of some physical properties to which being in pain is identical or reducible. The claim that mental properties are dispositional is of course controversial. It raises several challenges with respect to the possibility that mental properties bring about some physical effects.4

At heart, the problem of the causal efficacy of mental properties rests on the assumption of the so-called causal closure of the physical. This principle states that ‘every

4 The exposition of these problems has been articulated most prominently by Jaegwon Kim (1989; 1993; 1998; 2005).
physical effect has an immediate sufficient physical cause, in so far as it has a sufficient physical cause at all’ (Papineau 2009, p. 59). The principle of causal closure is meant to rule out the possibility of ‘non-physical intermediaries’ (ibid.) between physical causes and physical effects. If mental, non-physical properties can dispose to bring about some physical effects, however, the causal closure of the physical is seemingly violated. Typically, strong emergentists favour the strategy of denying the causal closure of the physical (e.g. O’Connor 2000, pp. 109–123; O’Connor and Churchill 2010). However, I do not wish to assess whether this is the best way to accommodate the dispositionality of mental properties. The point here is different, namely to show the plausibility of a view that takes mental properties as having a certain dispositionality.

Now let us return to PQA. In light of the definition of Powerful Quality, it is possible to reformulate Strong Emergence as follows:

**Strong Emergence**: token higher-level powerful quality S is strongly emergent from token lower-level powerful quality P if and only if for some occasion (i) S synchronically depends on P on that occasion; (ii) S has at least one dispositional feature not identical with any dispositional feature of P on that occasion; and (iii) S has at least one qualitative feature not identical with any qualitative feature of P on that occasion.

Condition (i) expresses the requirement of synchronic dependence for strong emergence. Condition (ii) is an adaptation of the New Power Condition to the case of powerful qualities. Note that if S has at least one dispositional feature that is not identical with any dispositional feature of P, this suffices for S being ontologically
distinct and distinctively causal efficacious as compared to P.\(^5\) The crucial difference between *Strong Emergence* and *Strong Emergence*\(^*\) is condition (iii). My claim is that the satisfaction of (iii) guarantees the distinctness in kind of S with respect to P. Also in *Strong Emergence*\(^*\) P has to be understood as a physical property or collection of physical properties.

Condition (iii) of *Strong Emergence*\(^*\) is analogous to the *New Power Condition* for the qualitativity for properties. This condition, which I call *New Kind Condition*, can be formulated more precisely as follows.

*New Kind Condition*: a token property S that synchronically depends on a token property P on a given occasion is distinct in kind as compared to P if and only if S has at least one qualitative feature not identical with a qualitative feature of P.

What motivates *New Kind Condition* is the observation that members of the same kind share some relevant qualitative similarity (Ellis 2001, p. 68–76). That is, members of the same kind share some relevant similarity with respect to the ways they are like.

\(^5\) Someone might worry that S’s dispositional feature might not be causally efficacious with respect to the physical. Thus, (ii) wouldn’t secure downward causation, which is often taken to be a feature of strongly emergent entities. If the reader shares this worry, then I suggest that they replace (ii) with (ii)* in *Strong Emergence*\(^*\): S has at least one dispositional feature not identical with any dispositional feature of P on that occasion and this dispositional feature is causally efficacious with respect to the physical.
Suppose that charge is a determinable kind property. Determinate tokens of charge differ in magnitude and distribution. Despite such differences, they belong to the same kind. There are various ways to accommodate this fact. One option is to say that instances of charge are of the same kind because they are instances of the same universal (Lowe 2006, p. 158–160). Another option is to appeal to essences: one can argue that instances of charge are of the same kind because they share the same essence (Ellis 2001; cf. Bird 2015). A third option is to argue that the classification in kinds is an arbitrary matter of convention. The choice between these options rests on independent reasons. Whatever view one might favour, it appears that belonging to a certain kind means to share some relevant qualitative features.

It is important to acknowledge that kinds can be very general or more specific. Dispositional and qualitative properties are two examples of very general kinds of property. Mass and charge are two examples of more specific kinds of property. In turn, determinates or specific quantitative properties, such as that of having a unit of elementary charge, are infimic species of kinds of properties (Ellis 2001, p. 70–74). Plausibly, mental and physical properties are very general kinds of properties. However, *New Kind Condition* allows us to discriminate among more specific kinds of mental property. For example, a qualitative feature of certain mental properties could be their systematic association with visual experiences but not auditory ones. These mental properties would constitute a more specific kind.

The tenability of *New Kind Condition* requires the imposition of some constraints on the relevant qualitative features. This is a cost that is worth paying: on the one hand, *New Kind Condition* regiments a familiar practice of distinguishing kinds; on other hand, it gives us a serviceable apparatus for capturing *Distinctness*. 
We need to rule out that certain properties such as that of occupying a certain space-time location are qualitative features of token properties. It is possible that two properties are differently located and yet synchronically dependent. But surely it would be odd if such properties were distinct in kind just because they occupy a different location. Consider a pyramid statue. Arguably, the property of having a pyramidal shape synchronically depends on the microphysical properties of the statue’s constituents. Yet the property of having a pyramidal shape is not co-located with any microphysical property of the statue’s constituents. It seems incorrect to claim that having a pyramidal shape is different in kind with the microphysical property of the statue’s constituents because of their different location. Similarly, we need to deny that certain properties related to the instantiation and origin of token properties are qualitative features. Otherwise, having a different origin would be sufficient for the distinctness in kind of two synchronically dependent token properties. Suppose that a sculptor carves a statue out a block of marble. The shape of the statue synchronically depends on the microphysical properties of the marble. However, the shape has a different origin with respect to the microphysical properties of the marbles block. Also in this case, there is something odd in claiming that the property of having a certain shape is distinct in kind because of its different origin as compared to the microphysical properties of the marble.

So far I have argued that PQA allows us to reformulate a schema for strong emergence as \textit{Strong Emergence*} and appeal to a version of the \textit{New Power Condition} and \textit{New Kind Condition} for powerful qualities. Equipped with this machinery, let us return to mental properties. Does the PQA accommodate satisfactorily the case of strongly emergent mental properties? It seems so.
To begin with, recall that from the viewpoint of PQA mental and physical properties are powerful qualities. Thus they have dispositional and qualitative features. I have already motivated the adoption of this view. For the sake of brevity, I shall not repeat the discussion here. Recall also that PQA is aimed to those strong emergentists who are committed to Distinctness, Qualitative Irreducibility, ‘Over and above’-ness, and Synchronic Dependence (Section 3). By embracing such theses, it is reasonable to suppose that a strong emergentist would believe that a mental powerful quality satisfies Strong Emergence*. This is to say that on some occasion a token mental powerful quality M (i) synchronically depends on a physical powerful quality P on that occasion; (ii) M has at least one dispositional feature which is not identical with any dispositional feature of P on that occasion; and, (iii) M has at least one qualitative feature which is not identical with any qualitative feature of P. For example, a strong emergentist could argue that M’s dispositional feature not identical with any dispositional feature of P is the bestowal of the disposition to entertain certain mental states. Given the commitment to Qualitative Irreducibility, a qualitative feature of M not identical with any qualitative feature of P might be the ‘what it is like’-ness of having M. Given New Kind Condition, M is therefore distinct in kind as compared to P. This captures the thesis of Distinctness: the strongly emergent mental powerful quality M is distinct in kind as compared to the physical powerful quality P. Note that it is not necessary that Ms qualitative feature not identical with any of Ps qualitative features is the ‘what it is like’-ness of having M. It can be any other qualitative feature of M. This is because New Kind Condition and Distinctness do not impose any constraint on the kind of qualitative features in questions. In order to warrant the distinctness in kind of M as compared to P, it is sufficient that M has a qualitative feature not identical with any qualitative features of P.
It seems that PQA is a promising account of strongly emergent mental properties: the satisfaction of (i) and (ii) of *Strong Emergence* captures *Synchronic Dependence* and ‘Over and above’-ness; the satisfaction of (iii) captures *Distinctness* and *Qualitative Irreducibility*. Crucially, PQA captures *Distinctness* and *Qualitative Irreducibility* in a unified way that embraces neither the via negativa strategy nor the anti-materialist strategy. It is therefore preferable to a powers-based account that appeal to one of these strategies. Relatedly, PQA evades the worries that both strategies raise: PQA does not force us to characterise mental properties in opposition to physical ones, and PQA does not rely on contentious anti-materialist arguments. To summarize, PQA has three choice-worthy merits:

1. It captures in unified way the commitment of strong emergentists to the distinctness in kind of mental properties as compared to physical ones;

2. It allows the possibility that strongly emergent mental properties are compatible with a dualistic naturalism (Chalmers 1996). In fact, the satisfaction of *Strong Emergence* only shows that strongly emergent mental properties are not physical in kind. Their existence does not require us to deny that everything that exists is a ‘consequence of a network of basic properties and laws’ compatible with the result of contemporary science (Chalmers 1996, pp. 127–128; Section 1). Nor does it demand an ‘expansion or reconception of a physical ontology’ (Chalmers 2010, p. 104);
3. PQA is more attractive than the option of supplementing a powers-based account with either the via negativa or anti-materialist strategy for capturing Distinctness (section 3).

4. PQA conceives of properties as unitary dispositional as well as qualitative entities. Therefore, PQA is preferable to views that posit powers and qualities because it is more parsimonious.

Overall, PQA a promising framework for articulating a metaphysic of strongly emergent mental properties. To repeat, PQA equips the strong emergentists with better resources to capture the commitment to Distinctness, Qualitative Irreducibility, ‘Over and above’-ness, and Synchronic Dependence. However, it is important to note that Strong Emergence* only provides a necessary and sufficient condition for strongly emergent powerful mental properties. Therefore, the question of whether mental properties are really strongly emergent to the proponent of view remains.

Let me conclude with a short summary. Powers-based accounts of strong emergence offer a promising framework to elucidate the claim that mental properties are over and above physical properties. However, strong emergentists are also committed to the distinctness in kind of mental properties as compared to physical ones. My aim was to show that a powerful qualities-based account accomplishes this aim in a preferable way to other available strategies. In Section 1 I laid out some constraints on the proposal. In Section 2 I characterized more precisely the notion of strong emergence. In Section 3 I elucidate the commitments of strong emergentists. In Section 4 I discussed two seemingly attractive strategies to accommodate the distinctness in kind of mental properties: the via negativa strategy and the anti-
materialist strategy. I argued that both strategies are unlovely for they privilege an anti-naturalistic outlook of strong emergence. In Section 4 I outlined a powerful qualities-based account of strong emergence. I showed how this account accommodates satisfactorily the commitment of strong emergentists about mental properties while, at the same time, it evades the worries related to the via negativa and the anti-materialist strategies. A powerful qualities-based account is therefore a preferable approach for the strong emergentist about mental properties.

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