Powerful Qualities for Strongly Emergent Mental Properties

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Abstract. Strong emergentists about mental properties of conscious experience typically hold that these are ontologically "over and above" and distinct in kind as compared to physical properties. Powers-based account of strong emergence offer a promising framework for elucidating the ontological "over and above"-ness of strongly emergent properties. However, they do not automatically ensure the desired non-physicality. In this paper, I argue that a conception of properties as powerful qualities has in-built resources for capturing both the ontological "over and above"-ness and the kind distinctness in a unified way. I begin by illustrating powers-based accounts of strong emergence. Then I defend the superiority of a powerful qualities-based account of strong emergence over two standard approaches recovering the distinctness in kind of strongly emergent mental properties: the *via negativa strategy*, and the *anti-materialist strategy*. I conclude that a conception of powerful qualities is a surprising yet natural ally for the proponent of strongly emergent mental properties.

Resumen. Los emergentistas fuertes sobre las propiedades mentales de la experiencia consciente suelen sostener que estas son ontológicamente "superiores" y distintas en tipo en comparación con las propiedades físicas. Las explicaciones basadas en poderes de la emergencia fuerte ofrecen un marco prometedor para dilucidar la "superioridad" ontológica de las propiedades fuertemente emergentes. Sin embargo, no garantizan automáticamente la no-fisicalidad deseada. En este artículo, sostengo que una concepción de las propiedades como cualidades poderosas tiene recursos incorporados para capturar tanto la "superioridad" ontológica como la distinción de tipo de una manera unificada. Comienzo ilustrando explicaciones basadas en poderes de la emergencia fuerte. Luego defiendo la superioridad de una explicación basada en cualidades poderosas de la emergencia fuerte sobre dos enfoques estándar que recuperan la distinción de tipo de las propiedades mentales

fuertemente emergentes: la estrategia de la vía negativa y la estrategia antimaterialista. Concluyo que una concepción de cualidades poderosas es un aliado sorprendente pero natural para el defensor de las propiedades mentales fuertemente emergentes.

1. *Introduction*

Under the banner of strong emergence, a diversity of view abounds. This paper focuses on *powers-based accounts* of ontological emergence (PAs for short) (e.g., O'Connor 1994; O'Connor and Wong 2005; Anjum and Mumford 2017; Wilson 2016, 2021, pp. 46–55; Yates 2016). Schematically, any typical PA holds that a higher-level entity H is ontologically emergent from 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. PAs claim to illuminate the condition under which a feature strongly emerges from an emergent base in terms of a comparison between the respective causal contributions (for some concerns about PAs, see Onnis 2022).

Perhaps, the most notorious case of alleged strongly emergent entities is that of mental properties involved in conscious experiences. Offering a metaphysically perspicuous framework that could accommodate the strong emergence of mental properties is, therefore, a plausible *desideratum* of PAs. My goal is to defend a conception of *powerful qualities* for articulating an improved version of PA for strongly emergent mental properties. As I will explain in due course, standard PAs do not ensure that the strongly emergent properties are not physical. By contrast, I will argue that a powerful qualities-based account of strong emergent (PQA) has built-in resources to capture the distinctive strong emergentist 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). The core idea of the marketed PQA 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, complementarily, things that have dissimilar qualitativity belong to distinct kinds. 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.

This work's novelty lies in expanding on the applicability of an ontology of powerful qualities to issues in the philosophy of mind (e.g., Heil 2003; 2012; Martin 2008; Jacobs 2012; Taylor 2013; Carruth 2016; Jaworski 2016). The application of the powerful qualities view to questions concerning the notion of emergence has received attention only in recent times. For example, David Yates has argued that the metaphysics of powerful qualities has the theoretical resources for demystifying the emergence (2016, 2020). Interestingly, the leading powerful qualities theorist of our time—John Heil—does not view metaphysical accounts of emergence favourably (Heil 2023), and—for what that's worth, I share Heil's reservations. However, my goal is not to persuade Heil otherwise. Instead, I want to accomplish something different and more modest. My objective is to convince the reader that a conception of powerful qualities is, contrary to what someone might be inclined to believe, surprisingly fruitful to characterize and make sense of the architecture of strongly emergent properties.

The structure is as follows. In the remainder of this section, I make some preliminary assumptions and clarify this work's objectives. In Section 2, I explain PAs in more detail. In section 3, I argue that a successful PA must capture the distinctness in kind of strongly emergent properties. To defend its superiority, I will discuss how PQA evades significant shortcomings of two standard strategies that PAs can invoke to capture 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 4, 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. In Section 5, I will argue that PQA is preferable since it escapes problems with both the *via negativa* and the *anti-materialist* strategies.

An important advantage of PQA, which will emerge in due course, is that it does not force us to reject a broadly naturalistic outlook of reality. The resulting view is naturalistic because it is compatible with naturalism. Yet it is a form of dualism because if mental properties satisfy PQA's condition of strong emergence, they turn out to be non-physical. If the arguments put forward will be successful, PQA clears the path to a naturalistic form of ontological emergence—one which appears kindred to what David Chalmers (1996) calls *naturalistic dualism*. Here I take that

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 (for more on this, see Montero and Papineau 2016). To appreciate PQA, we should keep them separated. One can be a naturalist without being a physicalist (cf. Chalmers 1996, p. 129).

Some preliminary assumptions are needed. First, this paper is not in the business to the defend the truth of strong emergentism about mental properties. I shall assume that this view is coherent but leave to its advocates the burden of showing that mental properties are *really* strongly emergent. To emphasize it again, I want to show strong emergentists how a conception of powerful qualities is an ally for their goals.

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; the latter is a cognitive explanatory relation which concerns the limits of our knowledge of complex systems (for a more detailed discussion, see Wilson 2016, pp. 389 – 397).

Third, I shall ignore the question of how to understand the relation of synchronic dependence. For the purposes of this paper, we can think of it as a form of what Wilson (2021) names 'cotemporal material dependence'. But we can leave open what more specific relation could replace it since illuminating this relation is not among our goals. We should think of it, however, as implying that some "minimal nomological supervenience of the emergent features types on base [physical] features types" (Wilson 2021, p. 73). PAs are, in principle, 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 articulating and defending PQA (Heil 2003, 2012; Martin 2008). Therefore, I will not explore how PA can be formulated from the viewpoint of other conceptions of properties. The formulation of PA is generally neutral on how we should think about the metaphysic powers. Here is Wilson (2021, p. 45) on this point:

talk of ‘powers’ in what follows is simply shorthand for talk of what causal contributions possession of a given feature makes (or can make, relative to the same laws of nature) to an entity’s bringing about an effect, when in certain circumstances (where the circumstances alone are not up to the task of bringing about that effect).

One of the goals of this paper is to explore some important advantages that are revealed if we are prepared to renounce neutrality about the metaphysics of powers. A less neutral conception of powers as powerful qualities, I will argue, secures the strong emergentist claim that mental properties are distinct in kind as compared to physical ones. One might protest that it remains 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). I am happy to concede that PA could fit with either approach (Wilson 2016, pp. 354–356). But the goal here is not to establish the superiority of PQA over these other views. To carry out a thorough evaluation, one would need to see the details of these other views. However, only the powerful qualities view conceive of properties as having essential dispositionality and qualitativity (Coates 2021). By design, powerful qualities have built-in resources for grounding the distinctness in kind of strongly emergent mental properties that other conceptions of properties must recover elsewhere. This feature makes PQA a superficially appealing candidate view worthy of further exploration.

2. *Powers-based Accounts of Ontological Emergence*

Strong emergentism can be thought of as the view 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. PAs of ontological emergence 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.

As I understand it, a power is—minimally—a natural or sparse property grounding the behaviour or nomic roles of an object instantiating. On my preferred understanding, a power is a property whose nature, or essence, is wholly modal and relational. In this sense, properties so

conceived of are sometimes called ‘pure powers’ (e.g., Bird 2007). A power is modal in the sense of determining the behaviour of things that instantiates it in various possible circumstances; it does not contribute just to how a thing actually is. And it is relational in the sense of being exhaustively and adequately specified in terms of ‘its causal/dispositional/nomic relations to other properties’ (Bird 2016, p. 345). Typically, the properties a power is said to be directed to are manifested in various possible natural circumstances. Alleged fundamental physical properties such as mass, charge, and spin are often invoked as examples of powers. For instance, a determinate charge is a pure power in the sense that its nature is exhausted in being directed to other manifestable properties, and it is modal in the sense that it determines various ways a thing instantiating it, such as an electron, can possibly behave. As it will become clear in due course, the powerful qualities view denies that properties are not exhausted by their dispositional character (namely, the way they contribute to the disposition of their bearers). Powerful qualities also possess a qualitative, non-dispositional character. The qualitative character of powerful qualities will turn out to be crucial to protect the claim that emergent mental properties are distinct in kind as compared to physical ones. But let us move slowly and in order, and th

Versions of PA differ greatly. But in spite of specific differences, they hold that the ontological distinctness and the distinctive causal efficacy of strongly emergent properties is best understood in terms of novel powers (O’Connor 1994; O’Connor and Wong 2005; Anjum and Mumford 2016; Wilson 2016; Yates 2016; Baysan and Wilson 2017). Jessica Wilson expresses this idea more precisely in what she calls *New Power Condition* (2021, p. 51; cf. Wilson 2016, p. 356).

> *New Power Condition*: token feature S has, on a given occasion, at least one token power not identical with any token power of the token feature P upon which S cotemporally materially 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*. Perhaps the power to scratch glass had by the hardness of a diamond

is not identical with any powers of the diamond's constituent carbon atoms. If so, the diamond's hardness would be ontologically distinct from the properties of the diamond's constituent carbon atoms. And by having such a distinct power, this token hardness would have a different power-profile to that of the diamond's constituent atoms upon which the diamond is plausibly cotemporally dependent.

The *New Power Condition* can be embedded in two schemata for emergence: weak and strong. Wilson's most recent formulation of the schemata is as follows (for some comments on Wilson's recent book on metaphysical emergence, see Baysan 2022 and Ney 2022):

Strong Emergence: What it is for token feature S to be Strongly metaphysically emergent from token feature P on a given occasion is for it to be the case, on that occasion, (i) that S cotemporally materially depends on P, and (ii) that S has at least one token power not identical with any token power of P (2021, p. 53):

Weak Emergence: What it is for token feature S to be Weakly metaphysically emergent from token feature P on a given occasion is for it to be the case, on that occasion, (i) that S cotemporally materially depends on P, and (ii) that S has a non-empty proper subset of the token powers had by P. (2021, p. 72)

Since my focus is on PBA, I shall restrict the attention to *Strong Emergence*. It is worth noting that Wilson takes the base property, namely the property upon the putative emergent feature cotemporally depends on, to be, typically, physically acceptable relational features of physical aggregates and pluralities (2016, p. 349). To use some of her examples, a system of molecules might have the base feature of having parts with certain positions and momenta, and a neuronal configuration (of neurons standing in certain neuronal configurations) can have the base feature of having a certain neurophysiological state (Wilson 2016, p. 350). In what follows, like Wilson, I assume that the base feature is, typically, a relational property of micro-configurations or structural

aggregates of fundamental physical entities. This clarification is crucial: the novelty of the power of a putative emergent feature ought to be understood relative to the powers of the base feature of the fundamental physical aggregates and not the powers of the individual entities belonging to it (Wilson 2021, p. 54).

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. 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 insensitivity represents a limitation for articulating a satisfactory account of strongly emergent mental properties from the viewpoint of PA.

A generally acceptable formulation of strong emergentism about mental properties takes this view to be committed to the following theses or something in the vicinity (Chalmers 1996, pp. 129–130; pp. 378–379; 2010, pp. 126–130; MacDonald and MacDonald 2010, pp. 9– 15; O'Connor 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 goal is not to defend such theses. Nor is it to persuade the reader to embrace them. Rather I aim to show that a version of PQA offers a unified framework for securing them. The most significant advantage of this approach, I will contend, is that PQA guarantees *Distinctness* in a preferable way to two standard strategies that can be combined wth PA for achieving the same objective.

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. The problem for PAs is this: the formulation of *Strong Emergence* captures only *Synchronic Dependence* and *Over and above-ness*. We need to supplement PAs with a criterion or strategy to accommodate *Distinctness* and *Qualitative Irreducibility*. I will argue that PQA guarantees both theses in a preferable way to two standard strategies that can be combined with PA to achieve the same objective.

To unpack the strong emergent theses, we need to say something more about mental properties. Fortunately, we do not need to define the notion of a mental property for present purposes. It is sufficient to characterize mental properties as those instantiated during conscious experiences—such as sensations, beliefs, memories, perceptions, emotions, etc. A distinctive feature of mental properties is the 'what it is like'-ness to have them. There is something it is like to 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).

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 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 and Taylor 2018 for more on this). 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 a similar vein, Galen Strawson, who favours the term 'categorical' over 'qualitative', claims that: '[a]ll being is categorical because that's 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 PQA view, namely a powerful qualities-based account, of strongly emergent mental properties, we must adopt a different conception of qualities.

A more promising view, 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). A similar idea of qualitativity as a matter of intrinsic aspect fixing the nature of properties can be found in Tugby (2012, 2021) and Coates (2021). in If we adopt such a view, then *Qualitative Irreducibility* can be interpreted as the thesis that type mental properties are such that they possess at least a qualitative feature, namely

an intrinsic nature, which is irreducible to any type physical property. One might wish to thicken this notion of qualitativity by including the role of grounding the dispositionality of properties into it (see Coates 2023 for an assessment of this family of views). But for now, we can rest content with the proposed thinner (though not bare) notion 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 nature 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 negativa strategy is problematic for at least three reasons:

(i) It blocks by stipulation the possibility that some version of identity physicalism, the view that every mental property is identical with some physical property, is true (e.g., Place 1956; Smart 1959; Lewis 1994). The problem is that identity

physicalism is a live possibility—whether we like it or not. We should endorse a view of mental properties that makes room for such a possibility;

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

(iii) If mental properties are non-physical by definition, 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). Alternative, to give another example, it might 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). But also in this case, the emergent property does not, at least intuitively, seem naturalistically unacceptable. 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).[1] 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 aims to secure *Distinctness* by establishing *Qualitative Irreducibility*.

The main problem with the anti-materialist strategy is that the soundness of the previous arguments is far from being the orthodox view.[2] Strong emergentists should not rest their view on arguments for the falsity of type-A materialism.

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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

Another problem with the anti-materialist strategy is that, once again, it 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).

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

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conceptualizing 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).

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

[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.

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 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 propertys 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 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

[4] The exposition of these problems has been articulated most prominently by Jaegwon Kim (1989; 1993; 1998; 2005).

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 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. 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.

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[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*.

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 *Strong Emergence** and appeal to a version of the *New Power Condition* and *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 characterize 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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