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An Argument for Micropsychism: If There is a Conscious Whole, There Must be Conscious Parts

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Abstract: Many philosophers today accept that phenomenal truths cannot be explained in terms of ordinary physical truths. Two possible routes to accounting for consciousness have received much attention: the emergentist route is to accept that ordinary experience is inexplicable in physical terms but that microscopic entities as described in physics nonetheless bring about conscious experience. The second route is to argue that microscopic entities have features not described in physics which can fully explain conscious experience. The view associated with panprotopsyism is that microscopic entities have no phenomenal properties. The view associated with panpsychism is that microscopic entities do have phenomenal properties. In this paper it is argued that if consciousness is extended in space only the latter view is possible. According to this argument for micropsychism, if phenomenal truths are not merely structural, all truths about a whole are truths about its parts plus structural relational truths. If there are phenomenal truths about the whole, this must be because there are phenomenal truths about its parts. It wouldn't follow that panpsychism is true, since it does not follow that consciousness exists outside the wholes we know to be conscious, but it does follow that emergentism and proto-panpsychism are false.

Keywords: micropsychism; panpsychism; mind – body problem; philosophy of mind; Russellian Monism

1 Introduction

The question whether there is consciousness at micro levels (low levels of magnitude, say the level of particles) has played an important part in discussions surrounding panpsychism. According to David Chalmers 'we can understand panpsychism as the thesis that some fundamental physical entities have mental states. ... We can read

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the definition as requiring that all members of some fundamental physical types (all photons, for example) have mental states' (2017a, p. 19). Panpsychism includes the claim that consciousness exists at micro levels, but it is also a claim about its distribution. According to the panpsychist, consciousness is 'ubiquitous in the natural world' (Goff, Seager, and Allen-Hermanson 2020). I will henceforth refer to the claim that there is consciousness at microscopic levels of magnitude as *micropsychism*.¹ For sake of simplicity, I call the claim that there is macro-consciousness at higher levels of magnitude, those associated with human conscious states in particular, *but no* micro-consciousness *macropsychism*.

According to the Goff-Seager-Allen-Hermanson formulation, to be a panpsychist is necessarily to be a micropsychist, but to be a micropsychist is not necessarily to be a panpsychist. A micropsychist need only accept there is consciousness at microscopic levels of magnitude, not that consciousness is ubiquitous in the natural world. In this paper, I present an argument for micropsychism: if there are conscious wholes, there must be conscious parts.

Although an argument for micropsychism is not tantamount to an argument for panpsychism, it is in the context of the current debate surrounding emergentist, panprotopsychoist and panpsychist approaches to understanding phenomenal consciousness that the argument can be most easily appreciated. This is because the present argument partly draws on the same observations that have led to the renewed interest in Russellian answers to the mind – body problem. The anti-materialist arguments developed by Chalmers (1996) and the distinction between structural and non-structural properties are here related to assertions regarding whole – part relations. Together, they produce a powerful argument against all forms of macropsychism and in favour of micropsychism.

In Section 3, I present my argument for micropsychism. The other sections serve to further put the argument in context. First, I will present Chalmers's argument against materialism as presented in *The Conscious Mind* and the emergentist and Russellian alternatives to materialism (Section 2). Russellian considerations then serve as the entry point for the argument for micropsychism which I go on to present in full. I present two examples of how the argument affects panprotopsychoist positions associated with macropsychism (Section 4). I compare the present argument to

¹ It is a term used by Strawson (e.g. 2006a, 2006b) and Goff (e.g. 2009a, 2021). Chalmers (e.g. 2017a) and Goff (2009b) speak of microexperience, and one could therefore also speak of microexperientialism. Following Montero (2009) and Wilson (2006) one could also adopt the term 'fundamental mentalism'. This is certainly in line with how Montero and Wilson understand the distinction between NFM (no fundamental mentality) and FM-positions, but it is not clear that the fundamental properties are properties of entities of very low levels of magnitude. According to Chalmers (1996), some property is fundamental if it is irreducible/not logically supervenient. Emergent macro-experience would also be fundamental in this sense, but it would not be micro-experience.

more familiar arguments for panpsychism (Section 5) and finish by mentioning some further questions the argument raises.

2 Context of the Question of Micropsychism

Chalmers (1996) understands the mind – body problem to be about dependence of phenomenal facts or truths on physical facts or truths. According to Chalmers, almost everything in our world depends in some way on micro-physical facts along with general laws of nature. ‘Almost everything,’ because our conscious experience forms an exception. Our experience has a qualitative nature, such that there is ‘something it is like’ to have an experience. These phenomenal properties do not depend on the physical and that means standard materialism is false.

Chalmers develops his argument in terms of supervenience. The concept is explained as follows: ‘B-properties *supervene* on A-properties if no two possible situations are identical with respect to their A-properties while differing in their B-properties’ (1996, p. 33). Physicalism as a metaphysical thesis can be formulated in terms of supervenience. Roughly, physicalism is true if everything is either physical or supervenient on physical stuff. Rather than speaking of supervening properties or facts, one can also speak of supervening truths, roughly as follows: B-truths *supervene* on A-truths if no two possible situations are identical with respect to their A-truths while differing in their B-truths. According to Chalmers, only logical supervenience is strong enough to warrant the claim that when everything supervenes in this manner, physicalism is indeed true. Logical supervenience holds when the B-facts supervene on the A-facts in all logically possible worlds. All worlds that are not logically contradictory are possible in this sense. Physicalism, materialism ‘is true if for any logically possible world *W* that is physically indiscernible from our world, all the positive facts true of our world are true at *W*’ (1996, p. 42).^{2,3}

2 Logical supervenience is contrasted with natural supervenience. Natural supervenience holds when B-facts supervene on A-facts in all naturally possible worlds. What is naturally possible, is what is possible in a world (universe) like ours. It is naturally possible for a monkey to type Shakespeare’s Hamlet, but it is not naturally possible for the pressure of a particular kind of mole of gas (the B-fact) to be different under the same physical conditions (the A-facts). What is naturally possible is logically possible, but what is logically possible need not be naturally possible. When B-properties supervene in all logically possible worlds, these B-properties will supervene in all naturally possible worlds, but when B-properties supervene in all naturally possible worlds, these B-properties do not necessarily supervene in all logically possible worlds.

3 Chalmers (e.g. 2017a) and many others today speak of dependence in terms of ‘grounding’ rather than ‘logical supervenience’. Schaffer, one of its advocates, uses ‘grounding’ as a primitive notion describing the way higher levels of reality depend on lower levels of reality (2009, p. 364). Goff (2021) considers it an alternative to identity. We should not presuppose there are levels of reality, non-

Chalmers presents his argument against materialism (physicalism) as follows:⁴

1. In our world, there are conscious experiences.
2. There is a logically possible world physically identical to ours, in which the positive facts about consciousness in our world do not hold.
3. Therefore, facts about consciousness are further facts about our world, over and above the physical facts.
4. So materialism is false (Chalmers 1996, p. 123).

The second claim singles out consciousness as unique among what Chalmers calls higher-level facts. All other higher-level facts, such as biological facts, ‘facts about architecture, economics and meteorology’ (1996, p. 74) are logically supervenient on the physical (sometimes *modulo* phenomenal facts (1996, p. 72)) because their concepts ‘are generally analyzable to the extent that their intensions can be seen to specify functional or structural properties. It is in virtue of this analyzability that high-level facts are in principle derivable from microphysical facts and reductively explainable in terms of physical facts’ (1996, p. 81). The nature of conscious experience on the other hand is not exhausted by structural, relational concepts and therefore, phenomenal truths cannot logically supervene on physical truths.

If the phenomenal truths about consciousness are not logically supervenient on (i.e.: a priori entailed by) physical truths and materialism is false, then how do we explain phenomenal truths? One possible answer is that consciousness is an emergent higher-level phenomenon: phenomenal higher-level truths are not logically supervenient on any lower-level truths. This was the position Chalmers pursued in *The Conscious Mind*: phenomenal properties are emergent properties of physical entities, and basic *psychophysical* laws account for them. However, that emergentist/property dualist conclusion was undermined by the fact that Chalmers had pointed out another alternative to materialism: a Russellian take on the mind – body problem that was neither straightforwardly materialist nor dualist.⁵ Torin Alter and Yujin Nagasawa consider Russellianism to involve the following three claims:

identity relations between the entities existing on those levels, or indeed that we require such a primitive notion to begin with. By contrast Fine’s (2001, 2002) version of grounding is similar to logical supervenience and unproblematic for present purposes.

⁴ Chalmers in fact develops different arguments, such as the ‘conceivability argument’ and ‘the two-dimensional argument’. I take the conceivability argument to be tantamount to the argument as presented here, but I believe it owes its strength to the argument as presented here (and not the other way around). The two-dimensional argument aims to account for identities and not merely supervenience relations. The two-dimensional argument is closer to Kripke’s (1980) argument for dualism/against materialism.

⁵ Russell (1927) is the key text by Bertrand Russell on the mind – body problem.

Structuralism about physics: the basic properties physics describes are structural/relational properties.

Realism about inscrutables: there are inscrutables, the natures of which are not wholly structural/relational.

(Proto)phenomenal foundationalism: at least some inscrutables are either phenomenal or protophenomenal properties. (Alter and Nagasawa 2012, pp. 70–1)

The Russellian avoids emergence of phenomenal properties by accepting nonstructural properties in the supervenience base. Instead of supposing phenomenal properties or entities to be emergent and irreducible, the Russellian view Chalmers (2003) refers to as type-F monism posits properties or characteristics of properties at lower levels which are not (exhaustively) described in the structural terms of physical science. This allows for the possibility that our human macro-conscious experience⁶ is in fact reducible, albeit not to the facts as posited by fundamental physics. On one type-F account, human macro-consciousness is reducible to, supervenient on and constituted by microscopic entities with phenomenal properties. This is the micropsychist account associated with panpsychism. On another popular account, macro-consciousness is reducible to, supervenient on and constituted by microscopic entities which do have an intrinsic or categorical character that goes beyond that asserted in physics, but which are not in any way conscious. This is panprotopsychism; a form of macropsychism.⁷

Both panpsychism and panprotopsychism have the advantage that they hold the promise of avoiding strong emergence. The notion of emergentism, as both employed by the original British Emergentists and in recent times, has been proven hard to pin down. Ansgar Beckermann offers the following definition:

(E) A macro-property F of a complex system S with micro-structure $[C1, \dots, Cn; R]$ is *emergent* if, and only if, the following holds: (a) It is a true law of nature that all systems with micro-structure $[C1, \dots, Cn; R]$ have F ; but (b) it does not follow from the general laws of nature holding for component parts $C1, \dots, Cn$, and suitable bridge laws that all objects with microstructure $[C1, \dots, Cn; R]$ possess all the features of property F . (Beckermann 2009, pp. 156–157)

⁶ When I speak about macro-consciousness or macro-conscious states, I have in mind the sort of states humans are acquainted with.

⁷ See Chalmers: ‘panprotopsychism is the view that fundamental physical entities are protoconscious. [...] protophenomenal properties are special properties that are not phenomenal (there is nothing it is like to have a single protophenomenal property) but that can collectively constitute phenomenal properties, perhaps when arranged in the right structure’ (2017a, p. 31) (Also Chalmers 1996, pp. 126–7). Strawson agrees that a proto-*experiential* properties are ‘wholly, utterly, through-and-through non-experiential phenomena.’ (2006a, p. 21)

Panpsychists and panprotopsychnists tend to find this idea deeply problematic. Strawson says of the alleged emergence of macro-consciousness: ‘If there is no such in-virtue-of-ness, no such intrinsic suitability, then any supposed emergence is left brute, in which case it is not emergence at all, it is magic ...’ (2006a, p. 21). It is magic because if any feature *Y* brutally emerges from *X*, there is literally nothing by virtue of which *Y* emerges. Nagel understands emergentism as the view that it is only the arrangement of the physical parts of a conscious whole that ground ordinary conscious states. ‘That such purely physical elements, when combined in a certain way, should necessarily produce a state of the whole that is not constituted out of the properties and relations of the physical parts still seems like magic even if the higher-order psychophysical dependencies are quite systematic’ (Nagel 2012, pp. 55–6).

Panprotopsychnists can join the panpsychists in their criticism of emergentism as Strawson and Nagel understand it, but they have issues with panpsychism as well. For some (Montero 2010; Stoljar 2006, 2020), the very idea of the physical being imbued with phenomenal properties seems implausible (‘the incredulous stare’; see also Goff, Seager, and Allen-Hermanson 2020: 4.1). Some think positing phenomenal properties at the fundamental level causes more problems than it solves (e.g. Coleman 2006, 2014, 2017; Stoljar 2020). Others may find the idea that consciousness is to be found in entities which do not have the observable characteristics associated with conscious beings (that is to say: brains) implausible. In any case, panprotopsychnists are not persuaded by the claim that panpsychism is the only tenable position if emergentism is rejected.

Yet, emergentism cannot presently be altogether discarded either. Nagel’s and Strawson’s criticisms notwithstanding,⁸ there are philosophers who insist there is nothing conceptually or metaphysically problematic about the (or, rather, ‘a’) notion of strong emergence (Brüntrup 2017; Chalmers 1996, 2017a; Humphreys 1997; O’Connor and Wong 2005; Santos 2015; Shoemaker 2002; Wilson 2005, 2021).

Thus, today, macropsychist accounts of consciousness exist in wide varieties. There have for instance been Russellian accounts according to which macro-consciousness is grounded in the non-mental (Benovsky 2018; Holman 2008; Montero 2010; Stoljar 2004, 2006⁹). There is an attempt to take the cosmos as the dependence base for everything, including human macro-consciousness (Goff 2021;

⁸ The most influential critic of emergentism is no doubt Jaegwon Kim, who has similarly accused emergentism of invoking ‘magic’ (Kim 1992a, p. 18) but has developed various other criticisms beside (1992b, 1999).

⁹ According to Chalmers’s use of the term, a panprotopsychnist denies microscopic entities are conscious in any way. This is the panprotopsychnism developed by Stoljar and Montero. However, Benovsky suggests microscopic entities do have a kind of mentality (p. 5), but there is nothing it is like to have this mentality. Assuming Benovsky is not using the term ‘mental’ to identify a functional property, he must believe that for something to be ‘phenomenal’ or ‘conscious’ there is not necessarily something it is like to be phenomenal or conscious. It is hard to disentangle metaphysical and semantic issues here. As we will see (Section 4.2), Coleman makes a similar move.

Nagasawa and Wager 2017; Shani 2015). There have been emergentist panpsychist bleedings (Bohn 2012; Brüntrup 2017; Mørch 2014) and attempts to formulate a metaphysically robust emergentism. Sam Coleman's panqualityism (Coleman 2012, 2014, 2017) is associated with panprotopsychism and therefore also with macropsychism.

In this paper I will be concerned with one novel argument for micropsychism and against macropsychism. I will not try to address all the issues confronting panpsychism here. To avoid possible confusion, I do want to mention one problem at the outset that has been central to the panpsychist debate: the combination problem (or combination problems, see e.g. Chalmers 2017b). This is the problem how we can account for the apparent unity of our conscious states (see e.g. Coleman 2006, 2017; Foster 1991; Goff 2006, 2009a,b, 2017; James 1890; Miller 2017; Roelofs 2019, 2020; Seager 1995; Shani and Williams 2022; Stoljar 2004). The worry regarding panpsychism is that if we cannot explain this unity (or specific features associated with it) by invoking micropsychic parts, panpsychist, micropsychist accounts of the macro-conscious states that characterise our consciousness lose their explanatory advantage over alternatives (e.g. panprotopsychism and emergentism). The argument for micropsychism sidesteps this dialectic: if the argument is sound, we must accept micropsychism because it is required to explain extended conscious wholes, not because of its explanatory value for the *unity* of some such conscious wholes.¹⁰

3 If There is a Conscious Whole, There Must be Conscious Parts

For this argument, I focus on the relation between a conscious extended whole and its proper parts. The relation in question is a synchronic, compositional, constitutive relation, which is to say it concerns a particular state of affairs at a particular point in time. The argument does not concern diachronic causal relations.¹¹ The proper parts

¹⁰ This is not a unique feature of the present argument. When Strawson (2006a) makes his argument, he also argues for micropsychism by arguing against alternatives such as emergentism and panprotopsychism. Coleman (2006) and Goff (2006) respond by pressing a combination problem. If Strawson has established the truth of micropsychism, pointing out that it leaves something to be explained does not provide an argument against what has been established. In Section 5, I compare my argument to Strawson's.

¹¹ The question whether phenomenal properties can be caused by nonphenomenal properties is also central to the current debate and concerns the panpsychist claim that consciousness is ubiquitous in the cosmos (James 1890/2019; Nagel 2012; Strawson 2006a) or the plausibility of causal emergence (e.g. O'Connor and Wong 2005; Santos 2015). I will have little to say about this alleged ubiquity, since there is no direct way in which the present argument concerning wholes and parts affect arguments in favour or against ubiquity.

are distinguished from one another in terms of their extension, such that the parts distinguished do not overlap and together make up the extended whole. Micropsychism is true if for any conscious whole, there are conscious proper parts. Macropsychism is true only if there are conscious wholes which have no conscious parts whatsoever. Macropsychists need not claim that *no* conscious whole has conscious parts. If there are conscious extended wholes, micropsychism is true if macropsychism is false.¹²

For my argument, I will suppose there are only non-conscious parts and consider whether there is a possibility of having a conscious whole. If there is no such possibility, macropsychism is false. Apart from an explanation of what the parts – whole relation is, we require an explanation of what structural and nonstructural properties and truths are. These explanatory steps are presented in 10 premises. These include stipulations and ensuing necessary logical truths and two claims associated with Russellianism defended by Chalmers (1996, 2003), Pereboom (2011, 2014), Alter and Nagasawa (2012), and Alter (2016) and generally accepted among realists about consciousness. The contention is that from these 10 premises, it follows that macropsychism is false. The argument to that effect is presented in five steps. The crucial point is that nonphenomenal, nonstructural truths cannot entail phenomenal truths about the same entity at a particular point in time.

ST (Structural Truths): Structural truths obtain by virtue of statements regarding causal interactions and non-causal relations.

NST (Nonstructural Truths): Nonstructural truths are truths which obtain by virtue of statements not involving merely causal interactions or non-causal relations.

Structural truths and properties play a crucial role in Chalmers's anti-materialist supervenience argument presented above. 'Almost everything' supervenes on the physical, because physical truths are structural truths and almost all truths can logically supervene on structural truths. Phenomenal truths form an exception because on reflection, it is clear that these are not functional or structural truths. Russellians accept this distinction and associate nonstructural properties (inscrutibles) with the intrinsic nature of physical entities. My formulation of what structural truths are is supposed to reflect the way in which the terms is used in the current debate. According to Chalmers, most facts can be conceptualized in terms which 'are generally analyzable to the extent that their intensions can be seen to specify functional or structural properties. It is in virtue of this analyzability that

¹² The view that there are conscious wholes is commonly accepted in the discussion between emergentism, panpsychism and other Russellian theories of mind, see 4.1 below. It is accepted that consciousness is a *res extensa*.

high-level facts are in principle derivable from microphysical facts and reductively explainable in terms of physical facts' (1996, p. 81). Functional facts are identified in terms of the work they do, i.e. their behaviour. Chalmers argues that instantiations of functional properties can be reductively explained in terms of properties of physical entities, such that these functional properties are realized by physical properties (though not necessarily the same physical properties: higher-level phenomena can be multiply realizable). Physical facts are in turn understood to be structural or 'structural and dynamic' (1996, p. 121). The basic structural facts to be considered are about spaces or states characterised by causal roles played with respect to other states and spatio-temporal facts (Chalmers 2003, 120).¹³ Thus, structural truths come in two flavours: first, there are truths regarding the way various entities causally impact one another; causal relational truths. Second, there are mere relational truths which simply follow from other truths about entities and their locations; non-causal relational truths.¹⁴

My formulation reflects that of Chalmers, but whereas Chalmers sometimes reserves the term 'structural' for fundamental physical truths alone, *ST* renders all functional, causal and relational truths structural truths. This formulation still leaves room for slightly divergent interpretations, since it is not entirely clear which truths qualify as truths in terms of interactions and relations. I prefer the view that all items referred to in the true sentence can be defined/analyzed in terms of their interactions and relations.¹⁵ On this reading a statement can be of the form ' X is p ', and yet be exhaustively structural, depending on how X and p are defined.

¹³ Since dynamics concern the changes of structure over time, it is irrelevant to the present discussion concerning synchronic relations.

¹⁴ In the literature, we find talk of structural and nonstructural facts, properties, or truths. I opt for formulations in terms of truths, because although Chalmers's argument shows there are structural and nonstructural truths, it does not show that the properties these truths describe are distinct. It seems to me one can coherently entertain the idea that a single property is both dispositional and categorical (qualitative); a view developed by Heil (2003, 2012), Martin (2008), and Strawson (2008) among others. Also, type-B materialists typically claim phenomenal properties to be standard physical properties, but recognize that phenomenal truths are not physical, structural truths.

¹⁵ Alter and Nagasawa, when considering the view that a property is structural if it can be defined using only relational, indexical, logical and mathematical vocabulary, take this definition to be insufficient. The reason they give is that there are relational terms which are not considered merely structural. 'Standing next to someone who is in pain' would be such a term. Alter and Nagasawa therefore propose that "structure" be understood to refer specifically to nomic (or causal) spatio-temporal structure' (2012, p. 76). It is not clear to me why Alter and Nagasawa do not point out that 'pain' cannot be relationally defined. Stoljar (2015, p. 15) similarly takes a sentence like 'there are things which cause spatiotemporal experiences' to express a structural truth. It is not a merely structural truth if there is no purely structural definition of all terms expressed.

Having outlined what structural truths are, what are nonstructural truths? These truths are not true due to the way things interact, nor are they mere relational truths. They are sometimes understood to be truths about (absolutely) intrinsic properties, as truths about quiddities, as truths about inscrutibles, as non-relational truths, as (absolutely) categorical truths.¹⁶ Truths about what something is like (what it is like to be a bat, what it is like to see red, what it is like to be in pain) are paradigmatic nonstructural truths. Phenomenal truths are truths about conscious experience, but that does not rule out there may be nonstructural truths about phenomena lacking consciousness of any kind. By formulating *NST* simply in terms of the nonstructural, we can remain neutral on the question what the best positive account of nonstructural truths looks like. *NST* says that nonstructural truths are truths which obtain by virtue of statements not involving *merely* causal interactions or non-causal relations. There is nothing problematic about causal, or non-causal structural truths about nonstructural phenomena, but if the terms refer to nonstructural phenomena, such a truth does not count as merely structural.

To see how causal relational truths, non-causal relational truths and nonstructural truths can be articulated, take a situation where one person, Marilyn, is experiencing happiness, and another person, John, is experiencing happiness next to her. It is a nonstructural truth that Marilyn experiences happiness and further nonstructural truth that John experiences happiness. Marilyn may have been the cause of John's happiness and *vice versa*. This is a causal relational truth about a nonstructural property. 'Marilyn makes John happy' is not a structural truth, unless happiness can be defined in terms of causal relational and/or non causal relational terms. By contrast, the truth about Marilyn and John being two happy persons is not caused by the fact that there is one happy Marilyn and one happy John next to her; this is a non-causal relational truth. The truth that there are two happy people there is entailed by the nonstructural truths about the respective individuals' happiness and the structural non-causal relational truth about there being two people located next to one another. In a sense, the number two has been reductively explained in terms of one plus one, but the happiness of two people as such is not reductively explained in terms of causal or non-causal structural truths. Similarly, if one brick weighs 14 kg and another one 6 kg, it is a non-causal structural truth that the one is

¹⁶ Montero (2010) uses the term 'inscrutibles'. This term is used to be neutral about how such properties are best described. Alter and Nagasawa (2012), looking at the various ways in which the distinction is made (extrinsic vs. intrinsic properties, dispositional vs. categorical properties, relational vs. non-relational properties, structural-and-dynamic vs. nonstructural-and-non-dynamic properties) also use the term in this way, to then raise the question: what are inscrutibles? Pereboom (2014) speaks of absolutely intrinsic properties, so as to distinguish them from properties of an entity which are not due to its relations with things external to it (extrinsic properties), but due to relations internal to it (comparatively intrinsic properties).

8 kg heavier than the other. This truth is entailed by true statements regarding the respective bricks and the 8 kg difference has been reductively explained.

Chalmers has made two important claims about structural and nonstructural truths:

Chalmers' claims:

Ca (Chalmers's Claim *a*): Structural truths alone cannot entail nonstructural truths.

Cb (Chalmers's Claim *b*): Phenomenal truths are nonstructural truths.

Ca and *Cb* form the second and third part of Chalmers's Russellian proposal ('the structure and dynamics argument'):

First, physical descriptions of the world characterize the world in terms of structure and dynamics. Second, from truths about structure and dynamics, one can deduce only further truths about structure and dynamics. Third, truths about consciousness are not truths about structure and dynamics. (Chalmers 2003, p. 120)

Ca and *Cb* are crucial to Chalmers's anti-materialist argument. The second claim of that argument mentioned above – 'There is a logically possible world physically identical to ours, in which the positive facts about consciousness in our world do not hold' – suggests there is something about conscious experience which is of such a different kind to what we know about physical sciences that we can readily tell this claim is true. *Ca* and *Cb* tell us the kinds in question are the structural and nonstructural. It never follows from a structural truth describing the organisation and causal interaction of entities and their properties ('what something does') that something over-and-above organisation and interaction is going on. Phenomenal truths describe *what it is like* to have an experience of something. Phenomenal truths are nonstructural truths, because they are conceptually independent of truths regarding the interaction between various entities and their properties.

RW (Region – Whole): An extended region *b* = whole *b*.

RP (Region – Part): An extended region *a* = part *a*.

PW (Part – Whole): An extended region/whole *b* is a region made up of non-overlapping extended proper regions/parts a_1, a_2, a_3 , such that region $b = \text{region } (a_1 + a_2 + a_3)$.

RW, *RP* and *PW* are stipulations. Wholes and parts are defined for our purposes as extended regions. *PW* rules out that there is a non-overlapping region a_4 that is also part of whole *b*. The regions of the non-overlapping proper parts combine to make up region *b*. Region $(a_1 + a_2 + a_3)$ is numerically identical to region *b*. It is natural to think

of a whole as the region of the brain where consciousness is located. The parts could then be identified as regions characterised by specific features, such as neurons. Although this is natural, it is no requirement for the argument: there is no restriction on how wholes can be composed. If we like, we can consider a whole consisting of my laptop and the rings of Saturn. The proper parts of the whole can be a region of one and a half molecule of the laptop, one ring of Saturn and a region of whatever else remains of the whole (the other rings and the rest of the laptop). We can think of the whole as a spatially continuous whole and the non-overlapping parts as adjacent to one another, as long as it is understood that these notions of whole and part imply nothing about wholes being systems and parts being individuated by the specific tasks they perform within such a system. The choice to divide the whole b into three non-overlapping proper parts rather than four or four billion is of course arbitrary; the whole can be divided however one likes. The notions of macropsychism and micropsychism should be understood to involve wholes and parts as understood in *RW*, *RP* and *PW*.¹⁷

States of affairs and truths:

SWP (State of affairs, Whole – Parts): What is the case at region b is the case at region $(a_1 + a_2 + a_3)$. What is the case at region $(a_1 + a_2 + a_3)$ is the case at region b .

TWP1 (Truths Whole – Parts 1): What is true about region b is true about region $(a_1 + a_2 + a_3)$.

TWP2 (Truths Whole – Parts 2): What is true about whole b is true about parts a_1 , a_2 , a_3 collectively.

Given *PW*, it logically follows that *what is the case at region b is the case at $(a_1 + a_2 + a_3)$; what is the case at $(a_1 + a_2 + a_3)$ is the case at region b* . (*SWP*) The same region is simply represented differently when it is represented as region b or region $(a_1 + a_2 + a_3)$. By switching from one representation to another, nothing changes about the region represented. With *TWP1*: *What is true about region b is true about region $(a_1 + a_2 + a_3)$* , we switch from descriptions in terms of what is the case (states of affairs) to a description in terms of truths. The basic idea is that whatever is relevant about a given state of affairs could be articulated with a true statement. By speaking of truths, statements and so forth, we can speak about entailment, logical supervenience and modalities in a transparent manner. My assumption is that given *SWP*, *TWP1* follows. Given *RW* and *RP*, if *TWP1* is true, *TWP2* is true. It should be emphasized that *SWP* is not an instance of the mereological fallacy. That fallacy is

¹⁷ This is the notion of a whole advanced in formal systems of classical extensional mereology (Leonard and Goodman 1940; Lewis 1991, pp. 72–90). As long as one accepts that extended wholes and parts exist, alternative metaphysical views on what wholes and parts are will be irrelevant to the argument.

that whatever is true of a whole is true of its respective parts. *SWP* talks of region ($a_1 + a_2 + a_3$). One region; not three. That this one region can have three parts follows from how the whole – parts relation has been defined (*PW*): any extended whole has as few or as many non-overlapping proper parts as we care to distinguish.

Given the stipulations above and their implications, together with Chalmers's claims, we can formulate the argument against macropsychism.

PPE (Parts – Parts Entailment): Truths about parts a_1 , a_2 and a_3 collectively are entailed by truths about parts a_1 , a_2 and a_3 respectively plus structural non-causal relational truths.

The states of affairs at a_1 , a_2 and a_3 respectively add up to the state of affairs a_1 , a_2 , a_3 collectively. What is the case at the one region ($a_1 + a_2 + a_3$) is partially the case at the respective regions a_1 , a_2 , a_3 and not anywhere else. There is no further region, no *place* from which truths about of the parts collectively can be added to the truths entailed by truths regarding the parts respectively. Therefore, the only way in which truths can be added to whatever is true about the respective parts by considering them collectively is by exploiting relational facts which connect a_1 , a_2 and a_3 to one another and whatever else is within or without region ($a_1 + a_2 + a_3$). It is sometimes suggested that there can be primitive truths regarding a_1 , a_2 and a_3 collectively.¹⁸ This suggestion is misguided: if there is a truth regarding a_1 , a_2 and a_3 collectively, there is such a truth by virtue of what is the case at region ($a_1 + a_2 + a_3$) (plus structural non-causal relations). What is the case at that region is what is the case in respective parts of the region combined. To deny this seems to result in the incoherent view that the combined region is not the region of the respective parts combined. Likewise, what is true about region ($a_1 + a_2 + a_3$) must also be true by virtue of what is true about the respective regions a_1 , a_2 , a_3 (plus truths regarding structural non-causal relations).

Given *TWP2* and *PPE*, *PWE* follows:

PWE (Parts – Whole Entailment): Truths about whole b are entailed by truths about parts a_1 , a_2 and a_3 respectively plus structural non-causal relational truths.

Chalmers's claim *Ca*, can be rephrased in terms of a part – whole relation as follows:

PW/Ca (Parts – Whole/Chalmers's claim *a*): The structural truths about parts a_1 , a_2 and a_3 alone cannot entail nonstructural truths about whole b .

Now we come to a crucial claim:

NSTEPW (NonStructural Truths Entailment Parts – Whole): The nonstructural truths about whole b are entailed by nonstructural truths about parts a_1 , a_2 and a_3 respectively plus structural non-causal relational truths.

¹⁸ See Bohn's (2012, 2018) 'fundamental collective plural properties'.

This is a claim about the entailment (E) of nonstructural truths about the whole ($NSTW$) by nonstructural truths about the parts ($NSTP$). It follows from PWE and PW/Ca : if truths about the whole are entailed by truths about its parts plus non-causal relational truths, and nonstructural truths about the whole are not entailed by structural truths about the parts, these truths must be entailed by nonstructural truths in so far as they are not due to non-causal relational truths (which do not in fact impinge upon the actual state of affairs at region/whole b).

PW/Cb (Parts – Whole/Chalmers's claim b): Given that there are no phenomenal truths about parts a_1 , a_2 and a_3 respectively, and structural non-causal relational truths are not phenomenal truths, there can be no phenomenal truths about parts a_1 , a_2 and a_3 collectively, and hence no phenomenal truths about whole b .

The move from a claim about parts a_1 , a_2 and a_3 respectively to a_1 , a_2 and a_3 collectively follows from PPE . The move from parts a_1 , a_2 and a_3 collectively to whole b follows from PWE . The supposition that phenomenal truths are nonstructural truths is articulated in Cb . It follows from Cb that structural non-causal relational truths are not phenomenal truths. All truths that can be added to truths about the parts are nonphenomenal. That there are no phenomenal truths about parts a_1 , a_2 and a_3 respectively is the necessary requirement for macropsychism, given the legitimacy of expressing claims about states of affairs in terms of truths regarding those states of affairs ($SWP - TWP$). The other necessary requirement for macropsychism is that there are phenomenal truths about a whole b (given $SWP - TWP$). PW/Cb demonstrates these requirements to be incompatible. If there are conscious wholes, there must be conscious parts and micropsychism is true.

To summarize:

Macropsychism is true if and only if there are extended conscious wholes composed entirely of non-conscious parts.

ST: Structural truths obtain by virtue of statements regarding causal interactions and non-causal relations.

NST: Nonstructural truths are truths which obtain by virtue of statements not involving merely causal interactions or non-causal relations.

Chalmers's claims:

Ca: Structural truths alone cannot entail nonstructural truths.

Cb: Phenomenal truths are nonstructural truths.

Stipulations:

RW: An extended region b = whole b .

RP: An extended region a = part a .

PW: An extended region/whole b is a region made up of non-overlapping extended proper regions/parts a_1, a_2, a_3 , such that region b = region $(a_1 + a_2 + a_3)$.

States of affairs and truths:

SWP: What is the case at region b is the case at region $(a_1 + a_2 + a_3)$. What is the case at region $(a_1 + a_2 + a_3)$ is the case at region b .

TWP1: What is true about region b is true about region $(a_1 + a_2 + a_3)$.

TWP2: What is true about whole b is true about parts a_1, a_2, a_3 collectively.

Argument:

PPE: Truths about parts a_1, a_2 and a_3 collectively are entailed by truths about parts a_1, a_2 and a_3 respectively plus structural non-causal relational truths.

PWE: Truths about whole b are entailed by truths about parts a_1, a_2 and a_3 respectively plus structural non-causal relational truths.

PW/Ca: The structural truths about parts a_1, a_2 and a_3 alone cannot entail nonstructural truths about whole b .

NSTEPW: The nonstructural truths about whole b are entailed by nonstructural truths about parts a_1, a_2 and a_3 respectively plus structural non-causal relational truths.

PW/Cb: Given that there are no phenomenal truths about parts a_1, a_2 and a_3 respectively, and structural non-causal relational truths are not phenomenal truths, there can be no phenomenal truths about parts a_1, a_2 and a_3 collectively, and hence no phenomenal truths about whole b .

It follows from *PW/Cb* that macropsychism is false and if there are conscious wholes, micropsychism is true.

4 The Argument for Micropsychism and Arguments for Macropsychism

The argument for micropsychism has different implications for people holding different positions on the mind – body problem. These positions have been categorized by Chalmers (2003) and I will make use of his typology here. First, the argument

for micropsychism is not directly relevant to those who hold there are no extended conscious wholes. This leaves out Cartesian dualists (a type of interactionist type-D dualists) and some forms of idealism. It also need not impress illusionists about consciousness (one kind of type-A materialists). In this section, I will consider how macropsychists might respond to the argument for micropsychism. First, I will look at macropsychist responses to the first four premises. *Ca* and *Cb* play a central role in the debate and they imply a specific response depending on the position taken in the mind – body debate. I will consider in particular whether Stoljar’s type-C materialist criticism of *Ca* and *Cb* is persuasive. I will subsequently look at how type-F, Russellian panprotopsychnists who accept the first four premises could respond to the argument for micropsychism as such. Finally, I discuss a position associated with panprotopsychnism developed by Sam Coleman and often referred to as panqualityism.

4.1 Macropsychist Views on Structural and Nonstructural Truths

For those who do *accept there are conscious wholes*, the first four premises regarding the distinction between structural and nonstructural truths (*ST*, *NST*) and *Ca*: *Structural truths alone cannot entail nonstructural truths* and *Cb*: *Phenomenal truths are nonstructural* are possible points of contention. Type-A materialists may not deny there are phenomenal truths, but instead claim phenomenal truths are structural truths.¹⁹ Then again, if phenomenal truths are mere structural truths, the type-A materialist need not accept there are conscious wholes to begin with. Type-B materialists typically accept *Ca* and *Cb* but they will argue that phenomenal properties are metaphysically or a posteriori necessitated by structural, standard physical properties and that although phenomenal truths are not nonstructural truths, this conceptual dualism implies no ontological dualism. This is to say that according to the type-B materialist, phenomenal properties are structural properties with nonstructural characteristics. Since none of this contradicts *Ca* and *Cb*, type-B materialists cannot reject the argument by appealing to them.²⁰ Type-C materialists accept

¹⁹ For Chalmers, to be realist about conscious experience just implies one is not a functionalist (or structuralist) about conscious experience. If so, the objecting functionalist is just confused. However, a functionalist can reasonably object by pointing out that the question regarding the nature of consciousness is a metaphysical one and not one to be settled by stipulating what one means by ‘real consciousness’.

²⁰ A type-B materialist can argue that phenomenal properties are nonstructural characterisations of microphysical properties. Such a type-B materialist would be a micropsychist type-B materialist. If type-B materialists hold that phenomenal properties are nonstructural characterisations of microphysical properties alone, they are macropsychists. If type-B macropsychists cannot target the first

Chalmers's anti-materialist arguments, at least when the second claim in Chalmers's supervenience argument is interpreted so as to concern only standard physical facts. Type-C materialists hold there may be non-standard physical truths on which all phenomenal truths do logically supervene. This view is very close to the Russellian response (type-F monism), but the reason why Chalmers's second claim is true is not because standard physical truths are structural and phenomenal truths are not. Stoljar (2015) takes issue with the claim that physical truths are structural and phenomenal truths are not. To deny phenomenal truths are nonstructural is to deny *Cb*. Dualist emergentists (either type-D interactionists or type-E epiphenomenalists) will generally have no trouble accepting *Ca* and *Cb*. Instead of reasoning there must be nonstructural truths about the parts a_1, a_2, a_3 to entail phenomenal truths about whole b , they reason the relation between truths about parts a_1, a_2, a_3 and about whole b must not be one of supervenience/entailment. Finally, *Ca* and *Cb* are crucial to Russellian panprotopsyism (type-F monists).

Type-A materialists and type-C materialists are the only ones to reject *Cb*. All other macropsychists need to reject further premises of the argument for micropsychism proper. But is there a case to be made against *Cb*? It is worth looking into Stoljar's criticism of *Cb*, because Stoljar has developed his type-C materialist position in tandem with a macropsychist version type-F monism (Stoljar 2004, 2006, 2020). Unlike type-A materialists, Stoljar is an unambiguous realist about consciousness who accepts there are conscious wholes. Stoljar (2006) casts the mind – body problem as a logical problem concerning three theses which can't all be true:

T1. There are experiential truths.

T2. If there are experiential truths, every experiential truth is entailed by some nonexperiential truth.

T3. If there are experiential truths, not every experiential truth is entailed by some nonexperiential truth.' (Stoljar 2006, p. 26)

Stoljar argues that T3 is false and T2 is true. The main reasons why one would believe T3 are the Conceivability Argument (Chalmers 1996) and the Knowledge Argument (Jackson 1986). According to Stoljar, T3 seems credible when one believes one knows all *kinds* of nonexperiential truths around. Chalmers argues that the kind of physical truths discussed in contemporary physics will not entail phenomenal truths. Stoljar argues it is plausible that there are experience-relevant types of nonexperiential truths, but that these are types of truths we are ignorant of. So far, Stoljar is on the

four premises of the argument, they too must find fault with the latter premises and the argument proper.

same page with the type-F Russellian macropsychists, who, as we have seen, believe the basic properties physics describes are structural/relational properties; there are inscrutables, properties we are ignorant of and at least some inscrutables are protophenomenal properties (Alter and Nagasawa 2012, pp. 70–1). Yet, Stoljar does not accept that these inscrutables are necessarily properties the natures of which are not wholly structural/relational.

So why does Stoljar reject *Cb*? In *Russellian Monism or Nagelian Monism?* (2015), he looks at different versions of the Russellian argument for panprotopsyism and argues they are all unpersuasive. Stoljar takes issue with the specific way the distinction between the structural and nonstructural is made in the Russellian structure and dynamics argument, starting with the weakest and simplest version of the argument and ending with the strongest and most complex. I will only discuss the first two main arguments Stoljar puts forward and conclude they beg the question against *Cb*. Therefore, there is no need to consider more complex formulations that would possibly fix problems with the first ones. Stoljar criticizes the following Russellian argument:

P1.a. Every physical truth is a truth of a certain kind, i.e., one that concerns relations.

P2.a. For every truth *T* of that kind, if *T* a priori entails a truth *T**, then *T** is of that kind too.

P3.a. No truth about consciousness is a truth of that kind. (Stoljar 2015, p. 7)

For our purposes, P2 and P3 are equivalent to *Ca* and *Cb*. Stoljar goes on to suggest P1.a. be replaced by ‘P1.b Every physical truth is a truth of a certain kind, i.e., one that concerns either extrinsic properties or comparatively intrinsic properties,’ (2015, p. 10) a comparatively intrinsic property roughly being a property of a whole due to the structure of its parts. According to Stoljar, the Russellian cannot plausibly claim that phenomenal truths do not *concern* relations or extrinsic and comparatively intrinsic properties and therefore needs to claim that only *some* phenomenal truths do not. I have defined structural truths as follows: Structural truths obtain by virtue of statements regarding causal interactions and non-causal relations (*ST*). I take it that truths obtain in virtue of statements regarding causal interactions and non-causal relations only if structural truths can be *analysed* in terms of statements regarding causal interactions and non-causal relations.²¹ It is not the case that truths containing phenomenal terms cannot *concern* extrinsic or comparatively intrinsic properties.

²¹ Chalmers has always made it clear that the question is whether we can fully analyse terms structurally, see e.g. Chalmers 1996 in Section 3 above and 2017a, pp. 28–9: ‘a structural property is one that can be fully characterized using structural concepts alone ... if there are quiddities, it is plausible that they (like phenomenal properties) cannot be fully characterized in structural terms.’

‘Marylin and John are happy next to one another’ implies ‘Marylin and John are next to one another’ and ‘being next to one another’ is a structural relation. We can allow that ‘Marilyn and John are happy next to one another’ concerns this structural truth. However, if being happy is not a structural truth, the sentence ‘Marylin and John are happy next to one another’ is not true by virtue of statements regarding causal interactions and non-causal relations. If phenomenal terms are nonstructural terms, *no* statements containing phenomenal terms can be true in virtue of statements regarding causal interactions and non-causal relations alone and so we have no reason to doubt *Cb*.

A second argument against a formulation of structural truths in terms of extrinsic and comparatively intrinsic properties starts with Stoljar’s observation that it is an open question whether standard physical truths are truths concerning extrinsic or comparatively intrinsic properties and phenomenal truths are not. The consequence would again be that we should not accept the Russellian claim, including *Cb*. If one agrees it is an open question whether standard physical truths are truths concerning extrinsic or comparatively intrinsic properties and phenomenal truths are not, indeed we have no reason to accept *Cb*. But unless Stoljar provides a reason not to accept *Cb*, this is begging the question. Curiously, Stoljar makes no effort to explain why it is an open question whether standard physical truths are truths concerning extrinsic or comparatively intrinsic properties and phenomenal truths are not. Alter says ‘Stoljar’s suggestion seems to be that here appealing to the familiar thought experiments is dialectically unacceptable’ (Alter 2016, p. 804). It is true that one cannot at this point defend *Cb* and *Ca* by appealing to familiar anti-materialist arguments, because Stoljar accepts these arguments for standard physical facts or truths. But *Ca* and *Cb* are not plausible because Chalmers and Jackson’s anti-materialist arguments are. On the contrary, *Ca* and *Cb* explain why people accept the anti-materialist arguments.²² I think it is more likely that Stoljar just does not think Russellians are in an epistemic position to claim that phenomenal truths cannot be analysed in comparatively intrinsic terms and physical truths can. This would also explain why Stoljar does not consider the question whether phenomenal terms can be wholly analysed in structural terms: how could we know? But those who believe *Ca* and *Cb* do so because they believe they are in position to evaluate *Ca* and *Cb* and therefore Stoljar’s arguments miss their target.

²² Chalmers (1996) does not first make his anti-materialist and then ponder why we intuitively feel they are right. The arguments are persuasive because there seems to be the difference in kind between physical and phenomenal properties and truths.

4.2 Russellian Panprotopsychism and the Argument for Micropsychism

Having discussed the first four premises, we will presently turn to the rest of the premises and the argument proper. In this case, it will often be unclear how one would respond to these premises and argumentative steps, since the argument is indeed a novel one. I will try to approach the argument from a Russellian panprotopsychist perspective, since this position shares many of its explanatory merits with Russellian panpsychism. One such advantage is that it does not have macro-conscious states appear out of nowhere: truths regarding properties of micro-entities are supposed to entail truths regarding properties of macro-conscious states.

But there are other reasons why Russellian panprotopsychism is an appealing alternative to standard physicalism. Russellian panprotopsychism comes metaphysically cheap: it does not require that we add something to our fundamental physical ontology to account for phenomenal properties. An ontology including only structural terms is metaphysically implausible since the entities characterized by structural properties must have an intrinsic property explaining why these entities behave in relation to other entities the way they do. Chalmers (2003) links this idea to Russell (1927): ‘physics characterizes physical entities and properties by their relations to one another and to us’ (Chalmers 2003, p. 130). But as such, physical entities are characterized only by their physical roles. There must be an intrinsic property that characterizes these entities. These intrinsic properties play the role of the dispositional physical properties. Stoljar (2004, 2006, 2013) particularly links these ideas to Armstrong (1961, 1968) and Blackburn (1990).

The second observation is that phenomenal entities or states have intrinsic, nonstructural properties: ‘there is something it is like to experience x ’ is not a truth that can be entailed by properties merely describing how entities interact or are structured internally. The Russellian move is to bring these points together. Perhaps intrinsic, nonstructural properties of physical entities (together with structural properties) can account for nonstructural phenomenal properties and in this way explain macro-conscious states. This option is held wide-open by Chalmers’s anti-materialist arguments. Put in terms of the supervenience argument outlined above: it is not clear there is a logically possible world physically and intrinsically identical to ours, in which the positive facts about consciousness in our world do not hold.

The merits of macropsychist versions of Russellian Monism as I have just characterized them also apply to panpsychist versions of this position. On the basis of these Russellian arguments, both micropsychism and macropsychism cannot be ruled out. Chalmers puts it as follows:

I have occasionally heard it said that panprotopsychism can be dismissed out of hand for the same reason as materialism. According to this objection, the epistemic arguments against materialism all turn on there being a fundamental epistemic (and therefore ontological) gap between the nonphenomenal and the phenomenal: there is no a priori entailment from non-phenomenal truths to phenomenal truths. If this were right, the gap would also refute panprotopsychism. I do not think that this is right, however. The epistemic arguments all turn on a more specific gap between the physical and the phenomenal, ultimately arising from a gap between the structural (or the structural/dynamical) and the phenomenal. We have principled reasons to think that phenomenal truths cannot be wholly grounded in structural truths. But *we have no correspondingly good reason to think that phenomenal truths cannot be wholly grounded in nonphenomenal (and nonstructural) truths*, as panprotopsychism suggests.' (Chalmers 2017a, p. 31, my emphasis)²³

The argument for micropsychism *does* provide a correspondingly good reason to think that phenomenal truths cannot be wholly grounded in nonphenomenal truths. Russellian panprotopsychists are partially right: just because phenomenal truths are nonstructural, it doesn't follow that all nonstructural truths are phenomenal. But it then doesn't follow that in a synchronic whole – part relation, nonstructural phenomenal truths can be entailed by nonstructural nonphenomenal truths (perhaps when combined with structural truths), as they would have it.

Russellian macropsychists need to reject some further part of the argument for micropsychism. Let us consider the argument and backtrack if necessary to the six premises.

PPE: Truths about parts a_1 , a_2 and a_3 collectively are entailed by truths about parts a_1 , a_2 and a_3 respectively plus structural non-causal relational truths. The first way to object is to argue there are truths about a_1 , a_2 and a_3 collectively not entailed by truths about parts a_1 , a_2 and a_3 respectively plus structural non-causal relational truths alone. One could appeal to fundamental psycho-physical laws or the role of causal relations. The problem with both suggestions is that the resulting truths about parts a_1 , a_2 and a_3 collectively have to be due to what is the case at region $(a_1, a_2 + a_3)$. But there is no region there that is not a region of a_1 , a_2 and a_3 respectively or some overlap between them. So the effects of psycho-physical laws or causal interactions have to be present somewhere in regions a_1 , a_2 and a_3 . But since we are considering a synchronic state of affairs, it follows that truths regarding those respective regions have already been taken into account as part of supervenience base a_1 , a_2 and a_3 .²⁴

²³ Similarly, in reaction to Strawson's micropsychist panpsychism, Coleman says that 'such a substantive thesis cannot be assumed, it needs motivating.' (2006, p. 44)

²⁴ Nagel (1979, p. 182 my emphasis) lists the kinds of properties from which truths about wholes could follow: 'All properties of complex systems that are not relations between it and something else derive from the properties of its constituents *and the effects on each other* when so combined.' When we look merely at synchronic relations between a whole and its parts, as we do in the argument for micropsychism, the effects of constituents on other constituents just *are* properties of constituents

One could argue there could be truths about a_1 , a_2 and a_3 collectively not due to anything about a_1 , a_2 and a_3 respectively. To do so would be to embrace radical emergentism and this goes against the spirit of Russellian panprotopsychism. Moreover, the move cannot succeed for the same reasons the previous move failed: properties of a_1 , a_2 and a_3 collectively, unless they are non-causal nonstructural properties, need to be located somewhere in regions a_1 , a_2 and a_3 respectively and if they are, they are already considered as part of the supervenience base. A final option would be to argue that truths about parts a_1 , a_2 and a_3 collectively are entailed by truths about parts a_1 , a_2 and a_3 respectively plus structural non-causal relational truths *and* further nonstructural truths. But these nonstructural truths too would have to be due to what is the case at region $(a_1, a_2 + a_3)$. But again, there is no region there that is not a region of a_1 , a_2 and a_3 respectively or some overlap between them. So those nonstructural truths must be due to what is the case in a_1 , a_2 and a_3 respectively and so are already considered part of the supervenience base.

Could one accept *PPE* but deny *PWE*: *Truths about whole b are entailed by truths about parts a_1 , a_2 and a_3 respectively plus structural non-causal relational truths*? If so, one could claim that although there is no truth about parts a_1 , a_2 and a_3 collectively not entailed by truths about parts a_1 , a_2 and a_3 respectively plus structural non-causal relational truths, there are truths about *PWE* that are not so entailed. To make this argument, one must argue against some of the premises to the argument. A first option is to reject *PW*: *An extended region/whole b is a region made up of non-overlapping extended proper regions/parts a_1 , a_2 , a_3 , such that region $b = \text{region}(a_1 + a_2 + a_3)$* . Since we have defined the parts – whole relation in this way, I cannot think of an objection to *PW*. *SWP*: *What is the case at region b is the case at region $(a_1 + a_2 + a_3)$. What is the case at region $(a_1 + a_2 + a_3)$ is the case at region b* just seems to follow. Again, I can think of no objection to consider here. We are left with the shift from speaking in terms of what is the case to what is true (*TWP*). To reject this move, is to claim that we cannot represent what is the case in terms of truths, such that a logical connection between different states of affairs can be made. But it is common among Russellian panprotopsychists to describe dependence relations in terms of truths and logical entailment (see e.g. the citations of Stoljar in 4.1 above), so an objection at this juncture would be *ad hoc*. Moreover, to argue that a whole is not its proper parts combined reeks of emergentism. Again, I see no route for a Russellian panprotopsychist to reject *PWE*.

The third step in the argument is *PW/Ca*: *The structural truths about parts a_1 , a_2 and a_3 alone cannot entail nonstructural truths about whole b* . This is what *Ca* implies for whole – part relations. *PW/Ca* should not worry Russellian panprotopsychists.

and so constitute no extra explanatory category. Grant any kind of causal process, no matter how mysterious or emergent; it will do nothing to explain a synchronic dependence relation.

How then, about *NSTEPW*: *The nonstructural truths about whole b are entailed by nonstructural truths about parts a_1 , a_2 and a_3 respectively plus structural non-causal relational truths*? This argument is central to the Russellian take on the mind-body problem. One could claim that causal truths can also be added to truths about parts a_1 , a_2 and a_3 . In scenarios which are not strictly synchronic, such a suggestion makes sense: perhaps parts a_1 , a_2 and a_3 at t_1 , possibly along with some external influence, necessarily give rise to some new feature in whole b /parts a_1 , a_2 and a_3 at t_2 . As we have seen in the discussion of *PPE*, not so in strictly synchronic cases: all causal effects one should wish to appeal to are already present in whole b /parts a_1 , a_2 and a_3 .

The Russellian panprotopsychoist therefore needs to reject the final step in the argument: *PW/Cb*: *Given that there are no phenomenal truths about parts a_1 , a_2 and a_3 respectively, and structural non-causal relational truths are not phenomenal truths, there can be no phenomenal truths about parts a_1 , a_2 and a_3 collectively, and hence no phenomenal truths about whole b*. A Russellian panprotopsychoist could argue that although the structural truths about parts a_1 , a_2 and a_3 alone cannot entail nonstructural truths about whole b , it is nevertheless possible that non-causal structural truths along with nonphenomenal nonstructural truths can entail nonstructural phenomenal truths. Why is this option ruled out? Nonstructural truths about parts a_1 , a_2 and a_3 being what they are, only the non-causal structural truths can make the difference for whole b . But such truths cannot make the required difference: nothing about whole b /parts a_1 , a_2 , a_3 changes when structural non-causal truths are added. Nothing happens to Marilyn's happiness by virtue of her being next to John.²⁵ Likewise, nothing happens to nonphenomenal parts by virtue of non-causal structural properties. It is still the case that the respective regions/parts a_1 , a_2 , a_3 are nonphenomenal. If the respective regions/parts are nonphenomenal, the parts collectively are nonphenomenal (*PPE*) and the parts collectively just are whole b (*PW*).

4.3 Panqualityism

Where Russellian panprotopsychoists posit the existence of unknown non-mental properties of microconstituents of ordinary macro-experience to explain how phenomenal truths could be logically supervenient on microscopic truths, Coleman (2012, 2014, 2017) posits the existence of qualities which lack subjectivity. According to Coleman, subjective experience could be a structural phenomenon, in principle reducible to the properties of its microscopic physical parts ('physical ultimates', as

²⁵ 'Happiness' features here as a nonstructural property. I would have liked to illustrate the point by a nonphenomenal nonstructural property, but unfortunately, I cannot think of an example.

he calls them). Here, Coleman reserves an important role for higher-order thoughts (HOTs), in particular awareness. A higher-order thought, or more generally, representation, is a representation of the first-order sensory content of a given mental state. Coleman accepts Rosenthal's 'insight regarding consciousness' ... 'that a conscious state is one a subject is aware of being in. This awareness is plausibly captured by the notion of mental representation of the conscious state' (Coleman 2017, p. 265). The first-order state involves qualities/sensory content. Coleman calls these qualities phenomenal qualities but insists they could (and for the most part do) exist without being part of some subjective, experiential state. Macro-consciousness occurs when a subject represents those qualities by being aware of them (having a higher order thought):

... a HOT's suitably representing a sensory state constitutes that state's being conscious. We might envisage a panqualityist world, a web of qualities, with the HOT system in brains, by representing other bits of these same brains, enabling consciousness of certain tiny portions of the material universe. (2017, p. 265)

If Coleman's panqualityism is a form of macropsychism, there must be a conscious whole consisting of parts which are not conscious at all. But on this picture, what is the conscious whole? Two regions are distinguished: first, the region of qualities we are conscious of, second the HOT system doing the representing. The region we are conscious of is apparently just a tiny portion of the universe, located in the brain, qualitatively similar to the rest of the universe. The region represented therefore is not a conscious whole. But the HOT system-region is not supposed to be conscious either. In his criticism of panqualityism, Itay Shani accurately characterises the problem: 'Where, in this landscape, one might wonder, could conscious experience take root? Where is that space, that designated range of our function, in which phenomenally conscious states reside and have their being?' (Shani 2021) If the answer is 'nowhere', Coleman's panqualityism cannot properly be considered a form of either macropsychism or micropsychism. If panqualityism does not identify conscious regions, this should not be considered a shortcoming of the approach to the mind – body problem in terms of extended regions. Rather, the approach in terms of extended regions reveals a shortcoming of panqualityism.²⁶ Finally, if we would be content just to consider the represented qualities or their representation in the HOT-system as the conscious region, the most natural reading of Coleman's approach is that he is a microqualityist, not a macroqualityist.

²⁶ See Shani's Eden Benumbed (2021) for a thorough criticism of panqualityism.

5 The Argument for Micropsychism and Familiar Related Arguments

In this paper I have presented an argument for micropsychism and have claimed it to be novel. Although the argument itself is novel, it is related to some familiar ones. Above, I mentioned Chalmers's anti-materialist argument and the related Russellian claims which lend credibility to Russellian theories of mind. Nonstructural truths cannot supervene on structural truths alone. Physical objects are likely to have nonstructural properties. Therefore, macro-level phenomenal truths can logically supervene on micro-level nonstructural truths. This argument does not rule out that phenomenal macro-level truths supervene on or emerge from non-phenomenal micro-level truths. This is because no restrictions are considered regarding nonstructural to nonstructural supervenience.

There's a variety of this argument, the intrinsic natures argument (see e.g. Goff, Seager, and Allen-Hermanson 2020), which does aim to establish panpsychism and micropsychism. It builds on the view that physical science only tells us about the structural properties of the world, i.e., that it describes the world in terms of what objects do and their structural organisation. But things must also have a nature of their own, an intrinsic nature. We do not know what this intrinsic nature is like, except when it concerns ourselves: we *know* we are intrinsically conscious. Since the only intrinsic nature of physical items we are familiar with is consciousness, we should assume the intrinsic nature of everything is consciousness. This argument thus incorporates the Russellian argument just mentioned, but should now lead to the stronger conclusion of panpsychism.

The argument can be interpreted as an appeal to parsimony: why suppose there are utterly different kinds of intrinsic nature when the postulation of a second, unknown kind of nature does no explanatory work? If we apply that logic merely to the parts constituting macro-conscious states, the question is what the explanatory relevance of nonphenomenal parts would be. If the answer is 'none', we would have no good reason to believe there are nonphenomenal natures. The argument can also be fleshed out differently: assuming consciousness resides at least in the brain, it follows that the natures of physical parts constitute consciousness. Given the fact that those parts belong to kinds of micro-entities ubiquitous in the universe, consciousness must be ubiquitous. The intrinsic natures argument incorporates structuralism about physics and realism about nonstructural inscrutibles, but the reasons for accepting panpsychism and micropsychism rather than panprotopsychoism have nothing to do with the argument I have presented.

A second kind of argument for (proto)panpsychism is the Anti-Emergence Argument (Goff, Seager, and Allen-Hermanson 2020). The Anti-Emergence Argument

is developed by Nagel (1979), leading to the conclusion that we need to assume the existence of basic non-physical properties in order to account for macro-consciousness. Since Nagel's argument does not rule out panprotopsychoism/macropsychoism, I will be looking at a version of the Anti-Emergence Argument that does. Strawson (2006a) makes an anti-emergence argument and aims to establish micropsychoism and panpsychoism. I will only discuss his arguments for micropsychoism.

Strawson wants to eliminate competing explanations of macro-consciousness by criticizing the sort of emergence those explanations require. First, there is a particularly radical form of emergentism. According to Strawson, for the self-acclaimed emergentist 'physical stuff in itself, in its basic nature, is indeed a wholly non-conscious, non-experiential phenomenon. Nevertheless when parts combine in certain ways, experiential phenomena "emerge"' (2006a, p. 12). One account of emergence that would make sense of this scenario is Van Gulick's formulation of radical kind emergence: 'the whole has features that are both (a) different in kind from those had by the parts, and (b) of a kind whose nature is not necessitated by the features of its parts, their mode of combination and the law-like regularities governing the features of its parts' (Strawson 2006a; Van Gulick 2001, p. 14). The possibility of brute, radical emergence as described by Van Gulick is deemed incoherent and magical by Strawson. It says there is metaphysically nothing about the non-experiential X that accounts for the experiential Y . It is incoherent to say X necessitates Y , if there is nothing in X by virtue of which Y emerges. If Y nonetheless occurs whenever some state X occurs, this is pure magic every time.

This argument is compelling but does not rule out less radical versions of emergentism that could account for the emergence of the experiential out of the non-experiential. There are versions of emergence which are neither obviously too weak to account for emergence of phenomenal properties nor as radical as Van Gulick's kind. Beckermann suggests the following definition of strong emergence:

(E) A macro-property F of a complex system S with micro-structure $[C_1, \dots, C_n; R]$ is *emergent* if, and only if, the following holds: (a) It is a true law of nature that all systems with micro-structure $[C_1, \dots, C_n; R]$ have F ; but (b) it does not follow from the general laws of nature holding for component parts C_1, \dots, C_n , and suitable bridge laws that all objects with microstructure $[C_1, \dots, C_n; R]$ possess all the features of property F . (Beckermann 2009, pp. 156–157)

On Beckermann's formulation, it is not ruled out that there are modes of combination of parts which necessitate emergent phenomena. The modes of combination which would necessitate the emergent phenomenon could be causal or non-causal.²⁷

²⁷ I am less sure Beckermann means strongly emergent features do not follow from general laws describing behaviour of the component parts in isolation, or that strongly emergent features do not follow from any feature of the component parts. The latter interpretation is ruled out by the

Actual proponents of emergentism develop views of emergence more in the vein of Beckerman's formulation. Consider, first, the case of C.D. Broad. Talking about chemical emergence, Broad states the following:

The essential point is that the behaviour of an as yet unexamined compound cannot be predicted from a knowledge of the properties in isolation or from knowledge of the properties of their other compounds; and it matters little whether we ascribe this to the existence of innumerable 'latent' properties in each element, each of which is manifested only in the presence of a certain other element; or to the lack of any general principle of composition ... (Broad 1925/1951, p. 66)

According to Broad, what qualifies as emergence (the essential point) is a case where a compound (whole) has properties which cannot be predicted on the basis of behaviour of entities in other compounds (wholes), pairs or in isolation. This unpredictability could be metaphysically explained by the fact that certain properties of elements (parts) have these properties only in a latent fashion or by the fact that there is no *general* principle (law) accounting for the properties such wholes exhibit, but rather a principle specific to this structure.²⁸ Broad says that properties can be latent until they appear in a certain structure, or the properties are already manifest in isolation, but the laws by which those properties behave cannot be deduced from the laws as they operate on entities in isolation. Those latent features and structure specific principles *X* account for emergent *Y*.

O'Connor and Wong (2005) construe a form of emergentism which also traces the potential for emergence to laws obtaining for isolated entities:

An emergent property of type *E* will appear only in physical systems achieving some specific threshold of organized complexity. From an empirical point of view, this threshold will be arbitrary, one that would not be anticipated by a theorist whose understanding of the world was derived from theories developed entirely from observations of physical systems below the requisite complexity. In optimal circumstances, such a theorist would come to recognize the locally determinative interactive dispositions of basic physical entities. Hidden from his view, however, would be the tendency (had by each of the basic entities) to generate an emergent state. This tendency is not discernible in contexts lacking the requisite macro-complexity, as it is a tendency towards a joint effect of an organized system of the right kind. (O'Connor and Wong 2005, pp. 664–5)

argument for micropsychism, *PPE* and *PWE* in particular. As we'll see, the first interpretation is more in line with actual emergentist proposals.

²⁸ These may be two ways of saying the same thing. Properties can be latent until they appear in a certain structure, or properties are already manifest in isolation, but the laws by which those properties behave cannot be deduced from the laws in isolation.

Again, there is no suggestion that there is nothing about the physical (micro) state to account for the emergent. As in Broad's case, emergence is an epistemic characteristic rather than a metaphysical one. If there is any contradiction in these notions of emergence, it is not the blatant contradiction Strawson discusses.²⁹

Strawson presents another anti-emergence argument. It is an argument directed at proto-experientialists (i.e. panprotopsychists) but it would also apply to emergentists like Broad and O'Connor and Wong. He addresses the question whether there are other instances where one kind of phenomenon could emerge from another. He considers interesting candidates and argues that in none of these cases it is plausible that this kind of emergence could come about. The moral is that phenomena belonging to distinct categories cannot be derived from one another. Proto-experientialists accept that 'for *X* to be intrinsically suited to or for constituting *Y* in certain circumstances is for there to be something about *X*'s nature *in virtue of which X* is so suited' (2006a, p. 21)³⁰ However, proto-experiential phenomena do not meet this requirement,

for it is built into our starting point [...] that they not have the same sorts of properties at all in this sense. The analogy [with unproblematic types of emergence (supervenience)] is not of the right size or kind. What we need, to put it now in terms of P properties, is, precisely, an analogy that could give us some idea of how non-P properties could emerge from P properties – and how things with only P properties could be proto-non-P phenomena. (Strawson 2006a, p. 22)

As I see it, there are two reasons why this anti-emergence argument will not convince everyone: first, it does not explain *why* one kind of phenomenon could not emerge from another and therefore it is not demonstrably incoherent to insist they can. Second, it does not tell us how to distinguish one kind from another. Why, for instance, not say that structural properties are one categorical kind and nonstructural, intrinsic properties another? Without an answer to this question the anti-emergence argument does not persuasively rule out the possibility that there is some protopsychist property of the same categorical kind P as the phenomenal properties of the macro-conscious wholes. As we have seen Chalmers (2017a, p. 31, 4.2 above) concedes the point, as do Goff, Seager, and Allen-Hermanson (2020, 3.1).

²⁹ Notice that Strawson (2006a) has in mind a type of emergentism which takes the emergence-base to be that of standard, theoretically physical entities and properties, a view associated with non-reductive physicalism. Neither Broad, nor O'Connor and Wong accept that a supervenience-base comprises entities with only the standard physical properties.

³⁰ Notice that this is also the problem Broad faces when his analysis of chemical emergence alluded to above is adopted for the emergence of phenomenal properties: something about *X* does synchronically account for emergent property *Y*. The difference is that the panprotopsychist does not accept those properties in *X* are diachronically emergent. This is presently beside the point, since the question of ubiquity (the 'pan' in panpsychism and panprotopsychism) does not concern us.

Stoljar (2004, 2006), Montero (2010), and Benovsky (2018) exploit it to make a case for panprotopsychism.

Although the argument for micropsychism can be called an anti-emergence argument in Strawson's sense, the arguments put forward by Strawson are not as conclusive as I take my argument for micropsychism to be. Strawson (2006a) does not explain *why* one categorical kind of phenomenon could not emerge from another and does not give us a criterion that would enable us to distinguish one kind from another. The argument for micropsychism on the other hand says the intrinsic nature of the whole is just the intrinsic natures of the parts combined. The differences between the wholes and parts in synchronic scenarios are merely non-causal, structural and have no consequences whatsoever for the intrinsic nature of the whole. This also tells us what sort of difference in kinds can and cannot be envisaged: macro-property kinds of macro-wholes cannot exhibit causal powers or intrinsic natures beyond those of micro-property kinds of the micro-parts combined.³¹

It is not merely the case that Strawson does not explicitly make an argument along the lines of my argument for micropsychism. The requirement of the macro-phenomenon not being categorically distinct from its constitutive micro-phenomena is weaker, since it does not rule out that the phenomenal nature of a whole may have features which are not the mere accumulation of the features of its parts, or a part may have features absent to the phenomenal whole. Strawson seems to allow that wholes constituting macro-experience can be, and most likely are nonstructurally, intrinsically distinct from the respective parts taken together:

On one view Es [microexperiential phenomena] undergo radical fusion in such a way that there's nothing more to their experiential being ... than what we experience in having experiences. I don't see how this can be so [...]. On another view the fundents (the *fundentia*, the elements that fuse) somehow continue to possess some intrinsic experiential character of their own even as they unite in such a way as to jointly constitute experience like ours. (Strawson 2017, p. 100).

Strawson prefers the latter view that some elements of parts are 'filtered' out from the macro-experience. How would this work? One way to think of this is that the macro-whole does not have all the contents of its parts: some contents remain exclusive to those microexperiential parts. This view is incompatible with *SWP*: *What is the case at region b is the case at region (a₁ + a₂ + a₃). What is the case at region (a₁ + a₂ + a₃) is the case at region b.* Alternatively, one could also reason that the microexperiential parts are included in the whole. They are just not part of the

³¹ This rules out kinds belonging to different categories emerging for one another. The combined effects and internal structure of a particular whole may very well count as a criterion for attributing to that whole the qualification of being of a certain natural kind.

macro-experience which constitutes but one element of the properties of whole *b*. In that case, all the parts play a role in constituting the macro-experience, but not all their phenomenal properties do. Since Strawson believes phenomenal properties require a subject, there will be two subjects present in one part: the macro-subject and the micro-subject experiencing things the macro-subject does not. Whether such a view is one worth entertaining, either from Strawson's perspective or mine is not a question I will take up presently. Strawson does not appear to entertain it, because he does not positively hold the view that the intrinsic nature of the whole is but the mere accumulation of the intrinsic natures of its parts.

6 Further Questions

In this paper I have presented a new argument for micropsychism, demonstrating that if conscious states are extended, the whole cannot have nonstructural intrinsic properties that are nonstructurally, intrinsically different from the properties of its proper parts. My argument will be difficult to digest for the vast majority of philosophers who are not micropsychists. Many would probably not touch it at all. There is a lot about micropsychism that people tend to find problematic which could not be addressed here. Let me finish by listing some further questions I think need to be taken up to give micropsychism a fair chance.

Does micropsychism imply subject-summing? It has been accepted without exception that if microscopic entities have phenomenal properties, they must be subjects. This is problematic for various reasons: first, we are not aware of micro-subjects. If our phenomenal parts constitute our macro-phenomenal mental state, should we not be experiencing all these micro-subjects? And why suppose there are only micro and macro subjects and no subjects in between? But if so, do we not end up with a potentially endless number of micro-subjects and is this not absurd? And furthermore, is there not something counterintuitive about the idea of fundamental particles being subjects? Indeed, it needs to be shown that micropsychism need not involve anything like subject-summing.

Does micropsychism imply panpsychism? Panpsychism also implies consciousness is ubiquitous in the universe. This aspect of panpsychism may be much more arresting to people than mere micropsychism. Yet, the idea that if micropsychism is true, it more or less follows that panpsychism is true (Stoljar 2020; Strawson 2006a) has not been critically examined. But although the argument for micropsychism shows there is little room for diversity for one entity at one point in time, there is no parallel argument showing that if a macro-conscious whole has conscious parts, all parts of that kind are conscious. In fact, micropsychism is also compatible with a form of panprotopsyism. According to Chalmers's definition, panprotopsyism is

false if micropsychism is true, but on a more literal reading of panprotopsychism, panprotopsychism is true if there are fundamental entities ‘everywhere’, which have some inherent potential to bring about consciousness without always being conscious. If the difference between the phenomenal and the nonphenomenal is taken to be a categorical difference, an ontology allowing this kind of change has at least an emergentist flavour. Shoemaker (2002) has suggested there is a viable form of emergentism according to which entities have micro-latent powers which under certain conditions give rise to micro-emergent properties which in turn realize macro-emergent properties. Shoemaker is thinking here of emergent causal powers, not nonstructural, intrinsic characteristics, but suppose there are micro-latent intrinsic characteristics: it is in line with Shoemaker’s suggestion that these micro-entities have their latent properties all along, but that only under certain circumstances these result in emergent properties. Protophenomenal properties could be latent properties which only under certain circumstances result in micro-phenomenal properties which in turn realize the macro-phenomenal properties. Such an ‘emergentist-micropsychist-panprotopsychism’ strikes me as the most promising alternative to full-fledged panpsychism.

The final question has to do with the possibility of macro-conscious zombie-worlds. Why should some conscious parts form a unified whole, such that there is something is like to experience everything going on at the same time? Bohn (2018), Goff (2009b), Itay and Williams (2022), Shani (2021), and Strawson (2017) argue that unless it’s logically necessary that micro-subjects constitute such a macro-subject, panpsychism (micropsychism) is false. Even if we rid ourselves of the notion of micro-subjects, it remains the case that the unity of the macro-whole needs to be entailed by the properties of its micro-parts. It strikes me that we have no good reason to believe micro-parts have no such property and every reason to believe they do. Yet, we should like to have a more positive grasp on the nature of those properties and their connection to phenomenal properties generally.

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