

# Panpsychism

According to 21<sup>st</sup> century Western common sense, mentality doesn't take up very much of the universe, existing only in the biological realm. Panpsychists deny this datum of common sense, believing that mentality is a fundamental and ubiquitous feature of the universe. There have been panpsychists in Western philosophy since at least the pre-Socratics, and the view achieved a certain dominance in the 19<sup>th</sup> century. Panpsychism fared less well in the twentieth century, being almost universally dismissed by Western philosophers as absurd in so far as it was thought about at all.

However, this was arguably part and parcel of the anti-metaphysics scientism of the period; the attempt to show that any questions which cannot be answered by straightforward scientific investigation are either trivial or meaningless gibberish. This project failed, and metaphysics is back in a big way in academic philosophy. At the same time, there is a growing dissatisfaction with the physicalist approaches to consciousness which dominated in the 20<sup>th</sup> century, and a sense that a radically new approach is called for. In this climate panpsychism is increasingly being seen as a serious option, both for explaining consciousness and for providing a satisfactory theory of the natural world.

## Constitutive panpsychism

We can usefully divide human mentality into two aspects: *thought* and *consciousness*. Thoughts are sophisticated, concept-involving representations of reality: the belief that God exists, the desire for global justice, the fear that the global economy is heading towards another crisis. Many are reluctant to ascribe thought very far beyond the human realm. Consciousness, in contrast, is simply the property of having some or other kind of experience: a thing is conscious if and only if there something that it's like to be it.<sup>1</sup> There's something that it's like for a rabbit to be cold, or to see colours, or to feel pain; each of these experiences is a form of consciousness.

Panpsychism is often caricatured as the view that fundamental physical entities like electrons have thoughts; that, say, electrons are driven by existential angst. As far as I am aware, no one defends this view. Rather panpsychism as it is defended in contemporary science and philosophy is the view that

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<sup>1</sup> Most people trace this way of defining consciousness back to Nagel 1975, although it appears earlier in Sprigge and Montefiore 1971.

*consciousness is fundamental and ubiquitous*. Perhaps the most popular form of panpsychism at present is *constitutive panpsychism*, which we can define as follows:

*Constitutive panpsychism* – At least some fundamental material entities are conscious; facts about human and animal consciousness are grounded in facts about the consciousness of their fundamental material parts.

Of course in human beings consciousness is a sophisticated thing, involving subtle and complex emotions, thoughts and sensory experiences. But there seems nothing incoherent with the idea that consciousness might exist in extremely basic forms. We have good reason to think that the conscious experience of a horse is much less complex than that of a human being, and the conscious experience of a chicken much less complex than that of a horse. Perhaps at some point in organic complexity the light of consciousness suddenly switches off. But it is equally possible that the light of consciousness never switches off entirely, but rather fades as organic complexity reduces, through flies, insects, plants and amoeba. For the constitutive panpsychist, this 'fading-whilst-never-turning-off' continues into inorganic matter, with fundamental physical entities – perhaps electrons and quarks – possessing extremely rudimentary forms of consciousness to reflect their extremely simple nature.

Constitutive panpsychism offers hope of an extremely elegant and unified picture of the natural world. In contrast to substance dualism, this world view does not involve souls or vital forces suddenly popping into existence with the emergence of life, or descending from an immaterial realm at the moment of conception. Human beings, and all other phenomena, are nothing more than complex arrangements of elements that are present in basic matter. Hence, constitutive panpsychism is structurally similar to physicalism: according to both views all phenomena are ultimately explicable in terms of a small number of basic properties of matter. The crucial difference between the two views is that for the physicalist those basic properties are utterly non-mental, whereas for the constitutive panpsychist those basic properties involve very simple forms of consciousness, from which the complex consciousness of humans and animals is derived.

For the moment I will equate panpsychism with constitutive panpsychism. In considering responses to the notorious *combination problem* for panpsychism, I will move onto other forms of panpsychism, to examine whether they fare any better against this challenge.

## Reasons to believe panpsychism I – Explaining animal consciousness

Physicalists believe that the emergence of consciousness can be accounted for in terms of material entities and processes which are utterly non-conscious, such as the firings of neurons. Many scientists and philosophers agree that we have at present not the faintest idea of how to make sense of this; this is the ‘hard problem’ of consciousness.<sup>2</sup> Physical mechanisms are well-suited for the explanation of behaviour, but it’s hard to make sense of a mechanistic explanation of *subjective experience*. No matter how complex the mechanism, it seems conceivable that it might have functioned in the absence of any experience at all, which seems to imply that mechanistic explanations shed no explanatory light on the existence of conscious experience.

The constitutive panpsychist offers an alternative research programme: Rather than trying to account for consciousness in terms of utterly non-conscious elements, try to explain the complex consciousness of humans and other animals in terms of simpler forms of consciousness which are postulated to exist in simpler forms of matter. This research project is still in its infancy. But a number of leading neuroscientists are now finding that working within a panpsychist framework bears fruit.<sup>3</sup> The more fruit is borne by this alternative research programme, the more reason we have to accept panpsychism.<sup>4</sup>

Physicalists may make the following objection:

Just because we haven’t yet worked out how to give a mechanistic explanation of consciousness, it doesn’t follow that such an explanation will be forever beyond our grasp. Scientists before Darwin had no explanation of the emergence of complex life, which led many to suppose that there must be some divine or miraculous involvement in the emergence of life. The genius of Darwin was to come up the idea of natural selection, which removes the need for divine assistance in the biological realm. Perhaps we just need the ‘Darwin of consciousness’ to come along and do something similar in the mental realm.

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<sup>2</sup> The term ‘hard problem’ derives from Chalmers 1995/96, although the difficulty itself goes back at least to Descartes, and has been expressed in many different forms such as Nagel (1975), Jackson (1982, 1986) and Howard (1982).

<sup>3</sup> Tononi 2012, Koch 2013.

<sup>4</sup> Strawson 2006 argues that panpsychism is the only way of avoiding an unpalatable form of radical emergentism. A similar argument is explored in Nagel 1975. A revised form of Nagel’s argument is presented (and responded to) in McLaughlin Forthcoming.

This form of objection is often accompanied by a certain narrative of the history of science, according to which phenomenon after phenomenon was declared unexplainable by philosophers, only to be later explained by the relentless march of science.<sup>5</sup>

However, to adopt panpsychism is not to *give up* on the attempt to explain consciousness scientifically; panpsychism is a scientific research programme in its own right. Constitutive panpsychists do not simply declare animal consciousness a sacred mystery which must have arrived by magic; they try to reduce animal consciousness to more basic forms of consciousness, which are then postulated as fundamental aspects of matter. It is true that consciousness itself is not explained in terms of anything more fundamental. But there is no a priori reason to think that science must always follow the most reductionist path. The scientific explanation of electromagnetism which eventually emerged in the 19<sup>th</sup> century involved the postulation of new fundamental electromagnetic properties and forces.<sup>6</sup> Perhaps the scientific explanation of human consciousness when it eventually arrives will be similarly non-reductive in postulating fundamental kinds of consciousness.

Of course there is much more to be said about whether or not physicalism is a viable project. However, given the deep difficulties associated with the attempt to account for consciousness in physical terms, and the deep philosophical doubts about whether this is even possible, it is perhaps a good idea to explore other options. At the very least, panpsychist explanations of human consciousness are worth exploring.

## Reasons to believe panpsychism II – Characterising the nature of matter

From Galileo onwards physics has worked with an extremely austere vocabulary, limiting itself to mathematical and causal (or nomic) predicates. It is far from clear that such an austere vocabulary is capable of giving an adequate characterisation of the nature of matter. It is natural to think that mathematical descriptions abstract from concrete reality. For example, a mathematical model in economics abstracts from the concrete reality of what is bought or sold, and the nature of labour. But physics is essentially offering us a mathematic model of fundamental physical entities such as electrons. In so far as we think a mathematical model abstracts from concrete reality, we ought to hold that

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<sup>5</sup> See for example Churchland 2013.

<sup>6</sup> Chalmers 1995 makes this point.

physics abstracts from the concrete reality of an electron. As Bertrand Russell put it ‘Physics is mathematical not because we know so much about the physical world, but because we know so little.’<sup>7</sup>

This difficulty arising from the austerity of physical vocabulary is avoided if we have a correspondingly austere conception of physical reality. *Dispositional essentialists* believe that there is nothing more to possessing a physical property such as mass than being disposed to behave a certain way, in the case of mass resisting acceleration and attracting other things with mass.<sup>8</sup> Things on this view are not so much *beings* as *doings*: if you understand what an electron *does* you know everything there is to know about its nature. Assuming dispositional essentialism, it is more plausible that physics can completely characterise the nature of physical entities; a mathematical model can capture what an electron does, and in doing so tells us what it is.

However, there are powerful arguments against the intelligibility of dispositional essentialism. Most discussed is the worry that attempts to characterise the nature of properties, under the assumption of dispositional essentialism, lead to vicious regress.<sup>9</sup> For any given disposition X, we understand the nature of X only when we know what its *manifestation*, i.e. the property it gives rise to when manifested. For example, the manifestation of flammability is burning; we only know what flammability is when we know that burning is its manifestation. However, assuming dispositional essentialism the manifestation of any disposition X will be another disposition, call it ‘Y’. To know the nature of X we need to know the nature of Y. But we can only know the nature of Y by knowing the nature of *its* manifestation, which will be another disposition, call it ‘Z’. To know the nature of Z we need to know the nature of its manifestation, and so on *ad infinitum*. The buck is continually passed, and hence an adequate understanding of the nature of any property is impossible, even for an omniscient being; in other words a dispositional essentialist world is unintelligible. Russell records the moral of the story thus, ‘There are many possible ways of turning some things hitherto regarded as ‘real’ into mere laws concerning the other things. Obviously there must be a limit to this process, or else all the things in the world will merely be each other’s washing.’<sup>10</sup>

These arguments press us to the conclusion that there must be a concrete categorical nature to matter which physics leaves us completely in the dark about. Physics tells us what matter does, but not what it

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<sup>7</sup> Russell 1927: 125.

<sup>8</sup> Bird 2007, Ellis 2001, 2002, Molnar 2003, Mumford 2004.

<sup>9</sup> Campbell 1976, Robinson 1982, Blackburn 1980, Armstrong 1997, Heil 2003, Lowe 2006.

<sup>10</sup> Russell 1927: 325.

is. What then is the concrete categorical nature of matter? Panpsychism offers us an answer: consciousness. Physics describes physical properties ‘from the outside’, giving us rich information about the behaviour brought about by mass, spin, charge, etc. But in and of themselves these material properties are forms of consciousness.<sup>11</sup>

What reason do we have to accept the panpsychist proposal? Firstly, it is not clear that there is an alternative, as it’s not clear that we have a positive conception of any concrete, categorical properties beyond those we know about in our conscious experience. The theoretical choice may well be between the panpsychist view as to the nature of mass, and the view that mass is ‘that we know not what’. In so far as we seek a picture of reality without gaps in it, panpsychism may be our only option.

Furthermore, panpsychism looks to be the most theoretically virtuous theory of matter consistent with the data. We know that some material entities, i.e. brains, have a consciousness-involving concrete categorical nature. We have no clue as to the concrete categorical nature of material entities outside of brains. The most simple, elegant, parsimonious hypothesis is that the concrete categorical nature of the stuff outside of brains is continuous with that of brains in also being consciousness-involving. Arguably, the reality of consciousness supports the truth of panpsychism in much the same way the Michelson-Morley finding concerning the constancy of light speed supports special relativity: in both cases the theory is the most elegant account of the data.<sup>12</sup>

Of course merely saying that the intrinsic nature of matter is ‘consciousness’ does not give us an understanding of the specific nature of any given physical property. What kind of consciousness is mass, as opposed to negative charge? What is it like to be an electron? These are questions for the panpsychist research project to address over the long term. Panpsychism is a broad theoretical framework, and it will take time to fill in the details. Compare: it took a couple of centuries within the framework of Darwinian evolution to get us genetics.

## Problems with panpsychism I – It’s just mad, isn’t it?

Panpsychism is increasingly being taken seriously in science and philosophy, but it is still not unknown for panpsychists to receive the odd incredulous stare. The supposition that electrons have some form of

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<sup>11</sup> This justification for panpsychism has its roots in Russell 1927 (although Russell was not himself a panpsychist). There has been a recent resurgence of interest in these views of Russell, which have resulted in the view which has become known as ‘Russellian monism’: roughly a panpsychist or panprotopsychoist (see below) account of the concrete categorical nature of matter. See Alter & Nagasawa 2015 for essays on this topic.

<sup>12</sup> This argument is from Goff Forthcoming and Goff MS.

mentality, albeit extremely basic, is still thought by many to be just too crazy to be taken seriously. This may be the result of a mixture of cultural factors. The rejection of idealism was one major motivation in the foundation of analytic philosophy, and intuitive distrust of related views such as panpsychism still hangs heavy.

Also in the public mind physics is on its way to giving us a complete picture the nature of space, time and matter, and there is little understanding of the difficulties which arise when we reflect on the austere vocabulary of the physical sciences, and the dubious coherence of a physicalist account of consciousness. When in the mindset of thinking that physics is on its way to giving a complete story of the universe, a consciousness-filled universe is extremely improbable, as this doesn't seem to be what physics is telling us. But if we accept that physics tell us nothing about the concrete categorical nature of matter, and indeed the only thing we really know about the concrete categorical nature of matter is that some of it is consciousness-involving, panpsychism starts to look much more likely.

It is true that, outside of respectable science and philosophy, views which sound a bit like panpsychism have been defended for rather unrigorous reasons, such as a vague feeling that the universe is animated and special. There is a 'new age' whiff to panpsychism which it's hard to dispel. But of course just because a view has been defended with all sorts of bad arguments, it doesn't follow that there are no good arguments for that same view. Serious philosophy requires us not to indulge in flights of fancy, but it also demands that we approach the arguments without prejudice.

At the end of the day, 'common sense intuition' should have little sway if we have a view which pulls its weight theoretically. The view that the world is round, that our ancestors were apes, that time slows down the faster you move; all of these are or have been wildly counter to common sense, but clearly that counts little if at all against their truth. If panpsychism can provide us with a plausible account of human consciousness and/or a coherent account of the concrete categorical nature of matter, then we have reason to take it very seriously indeed.

## Reasons to doubt panpsychism II – The combination problem

Most panpsychists accept that the most serious problem facing their view is *the combination problem*. There are in fact a number of different ways of understanding the combination problem, but in its paradigmatic form it is the difficulty making sense of the idea of *little conscious things* combining to make *big conscious things*. On a standard form of constitutive panpsychism, the smallest bits of my brain have extremely simple forms of consciousness, and my brain and its conscious experience is constituted

of these micro-level subjects and their conscious experience. Whilst we seem to have a clear understanding of how parts of a car engine make up the working engine, or bricks make up a house, we struggle to make sense of the idea of little minds coming together to make a big mind.<sup>13</sup>

Often in the literature the combination problem is traced back to the following key passage from William James:

Take a hundred of them [feelings], shuffle them and pack them as close together as you can (whatever that may mean); still each remains the same feelings it always was, shut in its own skin, windowless, ignorant of what the other feelings are and mean. There would be a hundred-and-first-feeling there, if, when a group or series of such feelings were set up, a consciousness belonging to the group as such should emerge. And this 101st feeling would be a totally new fact; the 100 feelings might, by a curious physical law, be a signal for its creation, when they came together; but they would have no substantial identity with it, not it with them, and one could never deduce the one from the others, nor (in any intelligible sense) say that they evolved it.<sup>14</sup>

The combination problem can be developed either as a *challenge* to panpsychism, or as an *objection* to panpsychism. Most panpsychists will accept the combination problem understood as a challenge; indeed meeting this challenge over the long term is perhaps the primary aims of the panpsychist research project. When understood as objection the intuitions behind the combination problem are worked into an argument that mental combination is *impossible*, or problematic in a way that renders the panpsychist research project senseless. Of course panpsychists will try to resist these arguments.

One way of pressing the combination problem as objection is to give a conceivability argument against the possibility of mental combination. For any group of conscious subjects it seems that we can conceive of those subjects existing in the absence of some *further* subject. To take a vivid example, we might imagine a *microexperiential zombie*, defined as a creature with the following characteristics:

- Empirically distinguishable from an actual human being, i.e. it behaves the same, if you cut it open no physical difference from an actual human can be empirically discerned.
- Each of its micro-level parts has conscious experience.

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<sup>13</sup> The term 'combination problem' comes from Seager 1995, but it is generally traced back to the James' quotation give below. See Coleman 2014, Chalmers Forthcoming and Goff 2006, 2009, MS for recent versions of the combination problem.

<sup>14</sup> James 1890: 1. 160. Shani 2010 responds to James' argument.

- No macro-level part of the organism has conscious experience.

Panpsychist zombies seem to be coherent, and this seems to imply that the postulation of micro-subjects (conscious subjects at the micro-level) sheds no explanatory light on the existence of macro-subjects (conscious subjects at the macro-level). Recall that the challenge to physicalist explanations of consciousness arises from the fact that the existence of physical mechanisms of whatever kind seems consistent with the absence of consciousness. The worry for panpsychists is that they seem to face an analogous challenge: they try to account for macro-level consciousness (which is ultimately what we are interested in explaining) in terms of micro-level consciousness, but the latter seems consistent with the absence of the former. We seem to have got nowhere.<sup>15</sup>

This is clearly a serious problem. Here are a number of potential solutions which have been defended by panpsychists (When discussing the final option ‘cosmopsychism’ I will distinguish between a *smallist* and a *priority monist* conception of nature; until then I will assume the more familiar position of *smallism*):

#### Give us time!

As has already been remarked, it is early days in the panpsychist research project, and it would clearly be unfair to dismiss it on the grounds that there is as yet no complete panpsychist account of matter and consciousness. The panpsychist may concede that at present the existence of micro-consciousness *seems* consistent with the absence of macro-consciousness, whilst arguing that once the final theory of micro-consciousness arrives this gap will be closed.

A worry for this approach is that it seems that the physicalist could make the analogous move in relation to the apparent gap between brain mechanisms and consciousness, by claiming that the final physicalist theory of consciousness will close this gap. This threatens to take away from panpsychism any advantage it has over physicalism in explaining animal consciousness. However, the panpsychist may offer a couple of reasons for thinking that her view still has the edge over physicalism:

- The panpsychist has a coherent and elegant hypothesis as to what the concrete categorical nature of matter is, whilst the physicalist has nothing to offer in this regard

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<sup>15</sup> This argument is given in Goff 2009 and Goff MS.

- There is an intuitive sense in which the gap between macro-level consciousness and micro-level consciousness is smaller than the gap between consciousness and non-consciousness, and hence the prospects for closing the former gap look better.<sup>16</sup>

### Emergentist panpsychism

As a general rule panpsychists think that human and animal consciousness can be explained in terms of more basic forms of consciousness. But ‘explained’ in what sense? There are two distinct notions of explanation the panpsychist can appeal to – *causal explanation* and *grounding explanation* – each of which leads to a distinct form of panpsychism: *emergentist panpsychism* and *constitutive panpsychism*.<sup>17</sup>

As an illustration of the distinction between causal explanation and grounding explanation, consider the following two cases:

- The ritual dance of a group of wizards causally bringing into being and causally sustaining the existence of a demon
- The dancing and drinking of a group of teenagers grounding the existence of a party

In the first case the product, i.e. the demon, is an addition in being to the producers and their activities: the demon is a distinct being in its own right. This is a case of causal explanation. In the second case, the product, i.e. the party, is nothing over and above the producers and their activities: the fact that there is a party wholly consists in the fact that there are people dancing, drinking, etc. This is a case of grounding explanation.

We have thus far in the paper been equating panpsychism with constitutive panpsychism. The constitutive panpsychist thinks that the macro-phenomenal facts (i.e. the facts about consciousness at the macro-level) are *grounded in* the micro-phenomenal facts (i.e. the facts about consciousness at the micro-level). Just as a party is nothing over and above the facts about people having a good time, so my consciousness is nothing over and above certain facts about the consciousness of my micro-level constituents.

No all panpsychists are constitutive panpsychists, however. Emergentist panpsychists think that macro-subjects are brought into being and causally sustained by micro-phenomenal goings on. Just as the demon in the above example is a genuine addition in being to the wizards who give rise to it (and their

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<sup>16</sup> Strawson 2006 makes this argument.

<sup>17</sup> The distinction between emergentist and constitutive panpsychism is made in Chalmers 2015, although the gloss I give here is from Goff 2015/MS.

activities), so my mind and its consciousness – according to emergentist panpsychism – is a genuine addition in being to the micro-subjects which bring it about (and micro-level facts in which they are involved).<sup>18</sup>

The combination problem, at least as we have characterised it above, seems much more of a threat to the constitutive panpsychism than it is to the emergentist panpsychism. Many take the laws of nature to be contingent: holding in some possible worlds but not in others. In this case, the conceivability of a world in which micro-consciousness does not give rise to macro-consciousness has little bearing on the question of whether our world is one in which the laws of nature ensure that micro-consciousness gives rise to macro-consciousness.

However, many take constitutive panpsychism to be the much more attractive position. This is due to its potential to solve the much discussed *causal exclusion problem*, which is the difficulty of reconciling two theses many philosophers find attractive: *micro-level causal closure* and *mental causation*.<sup>19</sup> *Micro-level causal closure* is the thesis that everything that happens has a sufficient micro-level cause. *Mental causation* is the thesis that human consciousness causes things to happen. The reason these two theses are difficult to reconcile is that if everything humans do has a sufficient micro-level cause, then this seems to ‘crowd out’ the possibility of the conscious experiences of humans causing anything. For example, if there is a sufficient micro-level cause of my screaming and running away, the fact that I feel pain seems to be redundant in the causal explanation of this behaviour.

The constitutive panpsychist avoids this worry, as the causal efficacy of grounded facts are not ‘crowded out’ by the causal efficacy of their grounds. Suppose I was kept awake last night by teenagers dancing and drinking in the flat upstairs. It would be confused to suppose that the fact that my sleepless night can be casually explained in terms of the activities of the teenagers entails that *the party* was not a cause of my sleeplessness; the fact that there is a party wholly consists in the fact that there are teenagers reveling, and hence the fact that the party kept me awake wholly consists in the fact that the teenagers dancing and drinking kept me awake. Analogously, the constitutive panpsychist can claim that the micro-level (consciousness-involving) cause of my screaming and running away – call it ‘M’ – does not render the macro-level event of my feeling pain redundant, by holding that my feeling pain wholly

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<sup>18</sup> Brüntrop Forthcoming defends emergentist panpsychism. Mørch 2014 and Seager Forthcoming defend a form of emergentism slightly different to the one I have described here, in which micro-subjects ‘fuse’ into a macro-subjects, ceasing to exist in the process.

<sup>19</sup> The causal exclusion problem is most associated with Jaegwan Kim (1989, 1993a, 1998, 2005). An early version of the point is due to Malcolm 1968.

consists in M, and hence that the fact that my pain caused me to scream and run away wholly consists in the fact that M causes me to scream and run away.

If we want to preserve this key advantage of panpsychism, we must somehow find a way of solving the combination problem which is consistent with the facts about macro-subjects being grounded in the facts about micro-subjects.

### Panprotopsychism

Panprotopsychism is not exactly a form of panpsychism, but it is a closely related view. Whereas panpsychists believe that basic matter has consciousness, panprotopsychists believe that basic matter is *protoconscious*. Protoconscious, or protophenomenal, properties are properties which have the following features:

- (i) They are not identical with or grounded in the mathematico-nomic properties revealed by the physical sciences,
- (ii) They are not forms of consciousness,
- (iii) In certain combinations they ground the existence of conscious subjects.<sup>20</sup>

Panprotopsychism is an attractive position for those who find purely physicalist account of consciousness inadequate, but are unable and unwilling to stomach full-blown panpsychism.

The big problem for the panprotopsychist is the lack of clarity about what exactly protophenomenal properties are. Of course we have the somewhat indirect characterisation of them as being properties which ground consciousness. But this does not in itself provide us with a characterization of what they are in and of themselves. We can distinguish three forms of panprotopsychism depending on the view espoused as to the nature of protophenomenal properties:

### Panqualityism

As far as I know, panqualityism is the only form of panprotopsychism which offers a clear positive proposal as to what protophenomenal properties are. Their answer is: they are qualities of the kind we find in conscious experience, but existing in an unexperienced form. Consider the qualities we find in our experience: the qualities which characterize what it's like to see red, or feel pain, or taste paprika. According to panqualityism *those very qualities* can exist without being experienced. The panqualityist

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<sup>20</sup> In Goff 2015 I argue that a more restrictive definition of protophenomenal is required, but I will avoid these details for the sake of simplicity.

would not say that fundamental physical entities such as electrons have precisely the qualities we humans find in our experience, for our experience involves very sophisticated and complex qualities. However, just as the panpsychist standardly holds that fundamental physical entities are like us in having conscious properties although in a much simpler form, so the panqualityist thinks that fundamental physical entities are like us in having *qualities of the kind we find in experience* although in a much simpler form (and unexperienced).<sup>21</sup>

How do the unexperienced qualities in basic matter come to be experienced? At this point panqualityists standardly give a heavily reductionist account of what it is for qualities to be experienced, similar to the kind of reductionist account a physicalism will give about consciousness as such. Thus, we can see panqualityism as a kind of middle way between physicalism and panpsychism. They distinguish between two aspects of consciousness: *quality* (its involving qualities which can't be captured in the austere vocabulary of the physical sciences) and *subjectivity* (its involving subjective experience of those qualities). The physicalist holds that both of these can be accounted for in terms of more fundamental properties; the panpsychist holds that neither can; the panqualityist holds that subjectivity can but quality can't.<sup>22</sup>

There are two common worries about panqualityism. Firstly, many have a deep intuition that the qualities we find in our conscious experience are *essentially conscious*, and hence couldn't possibly exist independently of experience, as they are required to do by panqualityism. Secondly, most of those who find physicalist reductions of quality implausible also find physicalist reductions of subjectivity implausible. It's hard to see how involving unexperienced qualities in purely physical, mechanistic processes would somehow render them experienced. No matter how complex the quality-laden physical process, it still seems conceivable that it should go on 'in the dark', i.e. in the complete absence of subjective experience.<sup>23</sup>

As we have discovered there are also conceivability worries with respect to panpsychism, one of the major motivations for the combination problem as discussed above. And unlike physicalism, panqualityism involves a positive proposal as to what the concrete categorical nature of matter is: unexperienced qualities. It is a difficult question which of panpsychism and panqualityism has the edge

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<sup>21</sup> Panqualityism is prominently defended by Coleman 2012, 2014, 2015.

<sup>22</sup> Tom McLelland (2012) combines this kind of reductionism about subjectivity with mysterianism (see below) about the fundamental nature of matter.

<sup>23</sup> This argument is made in Chalmers Forthcoming.

over the other. But perhaps we don't need to decide. It is still early days in the science of consciousness, and there is no reason why panqualityist, panpsychist, and perhaps even physicalist approaches should not be explored in parallel. Let a thousand flowers bloom!

### Mysterianism

Mysterians hold that human beings are incapable of grasping the nature of protophenomenal properties.<sup>24</sup> It might be argued that while we have perceptual access to standard physical properties, and introspective access to conscious properties, we simply have no faculty with which to access the nature of the 'hidden' properties of the brain which underlie conscious experience. Assuming that we have evolved for the purpose of survival, it is perhaps not surprising that nature has not equipped us with faculties for grasping the complete metaphysical nature of matter. We currently have high expectations concerning the human capacity to understand the natural world. However, this optimism is arguably rooted in the little questioned assumption that the physical sciences are on their way to giving us a complete account of their subject matter. It is sobering realisation that physics leaves us completely in the dark as to the concrete categorical nature of matter.

Having said that, it is perhaps too pessimistic to resort to mysterianism when there are other options which offer hope of more complete theory of reality. But if one is sufficiently persuaded by conceivability considerations that none of the options so far canvassed is able to provide a sufficient account of consciousness, one may become persuaded of the truth of mysterianism.

### Give us more time!

It is plausible that we do not have a faculty for directly accessing protophenomenal properties, but this fact does not preclude the possibility that we might come to have a grasp of them through imaginative theorising. A radical conceptual breakthrough may result in a range of hypotheses concerning the positive nature of protophenomenal properties, and there might turn out to be ways of testing the adequacy of those hypotheses.<sup>25</sup>

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<sup>24</sup> Mysterianism is most associated with McGinn 1989. Although McGinn would not describe his view as such, it seems to me to fit the definition of panprotopsychism. Tom McLelland (2012) defends a view which combines mysterianism about the fundamental qualities of matter with a reductionism about subjectivity akin to that defended by the panqualityist.

<sup>25</sup> Pereboom 2011 makes this argument.

Again, we need not decide to settle exclusively on one of these options. It could be that we retain some degree of hope that humans will eventually find the true nature of protophenomenal properties, whilst at the same time investing a certain amount of our credence in mysterianism.

### Phenomenal bonding

The panpsychist may concede that the mere existence of micro-level subjects doesn't entail the existence of a macro-subject, but argue that there the existence of micro-subjects bearing a certain relation to each other does not entail the existence of a macro-subject. We can call this special relationship which bonds little subjects into big subjects 'phenomenal bonding.'<sup>26</sup>

In support of this response, it does seem that relationships are crucial to combination: bricks can't form a house unless they're related to each other in certain quite specific ways. The challenge for this response is to say what exactly the phenomenal bonding relation is. It doesn't seem that we have any positive conception of a relation which bonds distinct subjects to form a unified mind, in which case the proponent of phenomenal bonding is faced with choices analogous to those of the panprotopsychist considered above: either live in hope that we will one day reach a positive understanding of the phenomenal bonding relation through theoretical imagination, or accept that such a thing is forever beyond the grasp of human beings. However, the phenomenal bonding panpsychist has an advantage over the (non-panqualityist) panprotopsychist in so far as phenomenal bonding panpsychism entails a positive understanding of the intrinsic properties of matter – they are forms of consciousness – even if it is unable to provide a positive understanding of the relationships which material entities bear to each other.

### Cosmopsychism

Throughout this piece I have been assuming a *smallist* conception of matter, by which I mean a conception according to which all fundamental objects and properties reside at the micro-level. For the smallist everything exists and is the way it is because fundamental micro-level entities exist and are the way they are. Smallism is commonly assumed by scientists and philosophers, but there are other possibilities. According to the *priority monist*, there is only one fundamental entity: the universe taken as a whole; everything exists and is the way it is because the universe exists and is the way it is.<sup>27</sup> In

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<sup>26</sup> This response to the combination problem is defended in Goff Forthcoming/MS.

<sup>27</sup> See Schaffer 2010 for exposition and defence of priority monism.

conjunction with panpsychism we get *cosmopsychism*: the one and only fundamental individual is the conscious universe.<sup>28</sup>

Clearly the comopsychist avoids the combination problem: the cosmopsychist doesn't need to make sense of micro-subjects combining to form macro-subjects, as on her view the macro-phenomenal facts are grounding in facts about the cosmos rather than in facts about micro-subjects. However, the cosmopsychist may face the inverse difficulty of the *decomposition problem*: how do 'big' subjects of experience, such as the whole universe, ground the existence of 'little' subjects of experience, such as human and animal minds?<sup>29</sup> We have seen that most of the options we have considered above face some sort of threat from conceivability considerations, and at first glance cosmopsychism looks to be no exception. It seems that we can conceive of a conscious universe existing in the absence of any subjects associated with its parts, from which it seems to follow that the postulation of a conscious universe does little to help us explain what we ultimately want to explain: the existence of human and animal minds.

However, what the cosmopsychist takes to be fundamental is not simply a conscious universe, but a conscious universe *which contains other conscious subjects as partial aspects*. For the smallest composite objects depend on – are built up out of – their parts. For the priority monist parts depend on – are partial aspects of – the whole to which they belong. Jonathan Schaffer describes the priority monist conception of the relation between parts and wholes as follows:

...the monist may offer a general conception of the partialia as abstract, in the etymologically correct sense of being a partial aspect. Wholes are complete and concrete unities. Parts may be conceived of as aspects of wholes, isolated through a process that Bradley describes as "one-sided abstraction." The priority of the one whole to its many parts is thus of a piece with the priority of the substance to its modes, both being instances of the general priority of the concrete entity to its abstract aspects.<sup>30</sup>

Whilst we cannot *imagine* one conscious subject containing other conscious subjects as partial aspects, there seems nothing contradictory in the idea. Compare: we cannot imagine a four-dimensional object, but such a thing is clearly coherent. And if the notion of a subject containing other subjects as dependent aspects makes sense, then the cosmopsychism arguably avoids the decomposition problem: we cannot conceive of *a conscious universe which contains other subjects as partial aspects* existing in

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<sup>28</sup> Cosmopsychism is defended by Wager & Nagasawa 2014 and Goff MS.

<sup>29</sup> The term 'decomposition problem' comes from Chalmers forthcoming.

<sup>30</sup> Schaffer 2010: 47.

the absence of the subjects which are its partial aspects. Cosmopsychism may be the only view out of all of those discussed in this paper which is able to avoid conceivability worries.

## Conclusion

Physicalism dominated Anglo-American philosophy in the latter half of the twentieth century, and is perhaps still the most popular view among analytic philosophers. However, there are two deep problems with view: (i) it does not seem to provide an account of the concrete categorical nature of matter, (ii) it does not seem to have the resources to explain human and animal consciousness.

Panpsychism offers solutions to these problems which deserve exploration. It may turn out that the combination problem renders panpsychism no advance on physicalism, at least as regards explaining animal consciousness; time will tell. At this stage, despite the misgivings of contemporary Western philosophers, panpsychism is a view worth taking seriously.

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