

## From Property Dualism to Substance Dualism

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*Abstract:* Property dualism is enjoying a slight resurgence in popularity, these days; substance dualism, not so much. But it is not as easy as one might think to be a property dualist and a substance materialist. The reasons for being a property dualist support the idea that some phenomenal properties (or *qualia*) are as fundamental as the most basic physical properties; but what material objects could be the bearers of the qualia? If even some qualia require an adverbial construal (if they are modifications of the thing that is conscious because of them, not properties of something else to which the subject of consciousness is related), then the property dualist can be driven to speculative forms of materialism — none of which, at this point, looks more likely to be true than the more modest versions of emergent dualism defended by contemporary substance dualists.

### 1. Target: The ‘Dual Aspect Theory’

For one reason or another, people in most times and places have found it easy to believe that there is more to a person than the body; and that life is possible after biological death because this ‘something more’ — the soul or spirit — outlives the body.<sup>1</sup> Many philosophers have been part of this consensus, developing dualistic theories about the nature of human persons. Philosophical dualists such as Plato, Aquinas, and Descartes — and, in our day, Karl Popper, Richard Swinburne, and William Hasker<sup>2</sup> — disagree about many details. But they have this much in common: they believe that, for every person who thinks or has experiences, there is a thing — a soul or spiritual substance — that lacks many or most of the physical properties characteristic of non-thinking material objects like rocks and trees; and that this soul is essential to the person, and in one way or another responsible for the person’s mental life.

Nowadays, this doctrine is often called *substance dualism*, and contrasted with various forms of *property dualism* — the thesis that the mental properties of persons are

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<sup>1</sup> For some conjectures about cognitive mechanisms that might promote belief in immaterial souls, see Barrett (2004, pp. 56-9).

<sup>2</sup> See Popper and Eccles (1977), Swinburne (1997), and Hasker (1999).

significantly independent of, or in some other way distinct from, the physical properties of persons. The distinction between the two kinds of dualism allows for an intermediate view: dualism about at least some mental properties but materialism about the substance that has the properties. The fact that one class of properties can vary independently of another does not rule out the possibility that some things have both kinds of properties. Substance materialists who are property dualists can point to examples like color and shape. Color properties and shape properties seem quite independent of one another. Yet a single object, such as a red ball, can have both—and not by having a part that is red but shapeless and another part that is spherical but colorless. Philosophers who deny substance dualism while advocating a robust form of property dualism are simply claiming that mental and physical properties are independent in something like the way color and shape are, while remaining attributes of a single object, consisting entirely of ordinary matter. Such a combination is sometimes called ‘the dual-aspect theory’.

Not so long ago, almost every philosopher was a property dualist, and ‘dualism’ — in the context of the mind–body problem — just meant what I’m calling ‘substance dualism’ (and that is what unqualified occurrences of ‘dualism’ will mean in this paper). In philosophy of mind today, although substance dualism is regarded as a non-starter, property dualism remains popular. In fact, the dual-aspect theory seems to be enjoying something of a comeback.<sup>3</sup>

Combining property dualism with substance materialism can be tricky, however. Which particular material object am I supposed to be? And can that choice be reconciled with the idea that some of my psychological states are somewhat independent from my physical states? Here, I raise problems for the supposition that the materialist can identify each person with a ‘garden variety’ physical object, such as a human body or brain — a physical object with which we are already familiar, as opposed to some more exotic physical object discovered by examination of the brain, or posited in order to solve problems for substance materialism. I cannot pretend to have shown that property

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<sup>3</sup> Chalmers (1996), Forrest (1993), Jackson (1982), Kim (2005), Robinson (2004), Rosenberg (2004), Seager (1999), Smith (1993), Strawson (1994), Stubenberg (1998), and Sturgeon (2000) are a few examples of philosophers who, as I read them (at least in the works cited; Jackson has since changed his mind) defend property dualism while distancing themselves from substance dualism. There are complications; some of these authors begin to flirt with panpsychism, and I might have to ask them a few more questions to find out whether they are true property dualists, in the sense I will articulate below.

dualism leads inexorably to a dualism of substances. But I shall try to show that it either leads to a dualism of mental and physical things, or to forms of materialism that cannot regard a human person as a body (or macroscopic part of a body) belonging to a familiar physical kind; and the prospects for more unorthodox forms of materialism appear not much better than those for at least some versions of substance dualism.

## *2. The Thesis of Property Dualism*

It is hard to resist describing various aspects of objects, or various respects in which objects can resemble one another, in terms of families of *properties*. There are, for example, all the shapes things can have — the shapes of cubes, of spheres, of pyramids, etc. — and all the colors — red, yellow, green, etc. Objects that are similar in shape but different in color are similar with respect to one aspect but not another — they have properties in common from the shape family, but not from the color family. Although talk of aspects is most naturally couched in these terms, I take it that any adequate philosophical answer to ‘the problem of universals’ must recover the phenomena of similarity in some aspects but not others; so nothing I say should turn on the ontological question whether there are properties.

Some respects in which we resemble one another correspond to deep, objective similarities; others are much more superficial. Similarities in our DNA are deep and objective; similarities in citizenship are not. Depth of similarity ‘bottoms out’ in exact resemblance with respect to some objective aspect.

Contemporary metaphysicians, following David Lewis, use the term ‘natural property’ to refer to objective resemblance in one extremely precise aspect. Plato introduced the metaphor of ‘cutting nature at the joints’; in today’s terminology, a natural property marks a joint in nature of the simplest and deepest kind. Of course, naturalness is not all-or-nothing. Schemes of classification may be more or less natural. We make generalizations about similarities and differences among the English, Scottish, Irish, and Welsh, even though belonging to the same ethnic group does not insure much objective similarity. A person’s ethnicity is not a highly natural aspect; but it may not be completely unnatural, either.

It should be uncontroversial that we human beings have mental aspects and that we — or our bodies, at least — have physical aspects. That is to say no more than that we can resemble one another psychologically and physically. Putting the matter this way does not presuppose anything about the relative naturalness of psychological and physical aspects — the most natural physical properties may, for example, be much more natural than the most natural psychological properties. Neither does it presuppose that our physical and psychological aspects constitute two mutually exclusive, irreducible kinds of properties, precluding the possibility of identifying mental properties with physical features of our brains.

Phenomenal properties are the best candidate for a kind of mental property that could vary independently of the physical, supporting some kind of property dualism. (I use the expressions ‘property’ and ‘state’ interchangeably; being in pain is a mental property or mental state, weighing 150 pounds is a physical property or physical state. Many different things can be in pain or have the same weight; so properties and states are clearly, in some sense, universals.) I do not have anything original to say about the proper way to draw a distinction between phenomenal consciousness and other kinds of mental state; nor do I have anything to add to the familiar arguments for property dualism about the phenomenal. I will simply repeat some platitudes about consciousness, and mention some well-known arguments:

A state is a phenomenal one if there is ‘something it is like’ or ‘a way that it feels’ to be in that state.<sup>4</sup> Not every mental state implies a particular phenomenal state. Intuitively, one wants to say that there is no distinctive ‘way that it feels’ to think about Vienna or to believe that grass is green, no experience undergone by everyone who thinks or believes these things. And so these kinds of intentional state are not kinds of phenomenal state — although, perhaps invariably, they will somehow involve or at least be accompanied by phenomenal states. Seeing, hearing, smelling, tasting, feeling texture and temperature, on the other hand, are all examples of modes of consciousness that do come with distinctive ‘ways that it feels’ to be in them. And the different kinds of ‘ways

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<sup>4</sup> Nagel (1974) makes use of such locutions in his seminal effort to focus attention upon the phenomenal aspects of consciousness.

it feels' can be divided at least as finely as there are differences in what it is like to be in these states.

Philosophers of mind have not reached any kind of consensus about the nature of phenomenal states. Most are anxious to explain how phenomenal features can be made to fit into a world in which physics has the last word, but the strategies employed are many and varied. Despite the disagreement, a majority has managed to hammer out a common credo — a kind of minimal physicalism. Although contemporary materialists are generally happy to remain agnostic about the kinds of properties that will be recognized as truly fundamental by some future 'final physics'; they are nevertheless confident of one thing: that serious science will never need to posit fundamental properties that divide things up based upon patently psychological or mental similarities and differences. Ultimately, reality will prove to be nothing but 'atoms in the void' or some equally non-mental phenomenon. Whatever the terms of the most fundamental causal transactions, they will not be minds or include mental states. And everything else will supervene upon, and be determined by, the facts describable in terms of this fundamental, future physics.

By means of now familiar arguments, property dualists try to undermine this physicalist consensus by inviting us to imagine possible worlds in which the physical facts remain the same, but phenomenal states are differently distributed. In 'zombie worlds', there are creatures just like us, physically, who are utterly devoid of phenomenal consciousness — there is nothing it is like to be them, just as there is nothing it is like to be a rock.<sup>5</sup> The possibility of zombies is not the only source of support for property dualism; there are also famous thought experiments involving creatures otherwise just like us, but for whom there is an inversion, relative to humans as we actually are, of the spectrum of phenomenal colors caused by various wavelengths of light striking their eyes<sup>6</sup>; there is Frank Jackson's 'knowledge argument'<sup>7</sup>; and several other styles of antiphysicalist argument.<sup>8</sup>

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<sup>5</sup> For a famous deployment of zombies, see Chalmers (1996, Chs. 3 and 4).

<sup>6</sup> For an important discussion of the inverted spectrum case, and related (alleged) possibilities, see Block (1980).

<sup>7</sup> See Jackson (1982); for recent developments, see Ludlow, et al. (2004).

<sup>8</sup> The latest rallying point for the forces of anti-physicalism is provided by Koons and Bealer (2010).

What most of these arguments purport to show is that, in experience, we are aware of phenomenal properties that could differ despite the fact that all the fundamental non-mental properties are distributed in the same way. The same thought experiments that are supposed to show the failure of the phenomenal to supervene upon the chemical and biological properties of brains should, if they are successful in this role, also support the failure of the phenomenal to supervene upon some unknown family of “protophenomenal” properties that a “protopanpsychist” might attribute to smaller parts of our brains (Chalmers, 1998, pp. 126-7 and 298-9; Rosenberg, 2004, ch. 5). When we ask ourselves whether there could be creatures physically like us, but with inverted spectra, most of us are not imagining, in vivid detail, the true neurophysiological side of color experience — since most of us don’t know all these details, but only vaguely know something about how networks of neurons may be excited. We are simply imagining creatures just like us with respect to *whatever* properties our brains may have, other than the qualia with which we are familiar in experience. To the extent that a dualism of physical and phenomenal properties is supported by vaguely imagined inverted spectra cases and zombies, a dualism of “protophenomenal” properties and phenomenal properties will also be supported. Prospects are dim for finding some other family of properties — neither those mentioned in the ‘final physics’ description of non-mental things, nor those discovered in experience — that could be more basic than our qualia, somehow grounding phenomenal similarities and differences in a third realm, beyond the reach of physics *or* experience.

What would inverted spectrum and zombie arguments show, if successful? I assume that ‘the true final physics’ would successfully identify the most natural non-mental properties exemplified in the actual world; and that the existence of phenomenal dissimilarities between possible creatures that exactly resemble one another with respect to the non-mental properties mentioned in our true final physics would require that some phenomenal properties are just as fundamental as the most fundamental non-mental properties. This would falsify physicalism, because not everything would supervene upon the distribution of just the non-mental properties mentioned in final physics. (Given the ambitious explanatory aims of physics, presumably any fundamental phenomenal properties that have physical effects would have to show up in an ideal physics; that’s

why construing physicalism as just supervenience on facts describable in the ideal future physics is not enough — a crucial part of physicalism is its bet on the absence of mentality at the most fundamental level.)

The conclusion supported by appeal to zombies and their ilk is, then, a thesis about which properties are the most natural ones — which ones ‘carve nature at the joints’, being responsible for the most fundamental kinds of objective resemblance among things. Naturalness comes in degrees because resemblance comes in degrees; and property dualism is a claim about where phenomenal similarities and dissimilarities lie on the spectrum from more to less natural. Although some phenomenal properties or conditions are less than perfectly natural (for example, highly gerrymandered or disjunctive ones, like seeing-red-or-feeling-an-itch; and determinable ones, like hearing some sound or other), the property dualist believes there is some family of the most basic phenomenal properties that satisfy the following conditions: they are as natural as the most natural properties that would be mentioned in a ‘final physics’ description of just the non-sentient material objects and systems; and they serve as the basis for all differences and similarities among the types of experiences it is possible to have — all the less natural phenomenal properties supervene upon them. I shall use the term ‘qualia’ to refer to these most fundamental phenomenal properties, whatever they are, and whatever has them.

If property dualism is true, the catalogue of fundamental properties and fundamental laws must include more than just the kind one finds in physics as it currently stands. Paul Churchland considers the hypothesis that ‘mental properties are *fundamental* properties of reality, ...on a par with length, mass, electric charge, and other fundamental properties’ (Churchland, 1985, p. 12). Churchland notes that a property dualist might cite, as historical precedent, other cases in which a property was thought to be reducible but turned out to be fundamental — e.g. ‘electromagnetic phenomena (such as electric charge and magnetic attraction)’ which were once thought to be ‘just an unusually subtle manifestation of purely *mechanical* phenomena’ but ultimately had to be added to ‘the existing list of fundamental properties’.

Perhaps mental properties enjoy a status like that of electromagnetic

properties: irreducible, but not emergent. Such a view may be called *elemental-property dualism*.... Unfortunately, the parallel with electromagnetic phenomena has one very obvious failure. Unlike electromagnetic properties, which are displayed at all levels of reality from the subatomic level on up, mental properties are displayed only in large physical systems that have evolved a very complex internal organization. ... They do not appear to be basic or elemental at all. (Churchland 1985, pp. 12-13)

Churchland's objection is not a trivial one, and I worry that property dualists have not done enough to answer it. Here, I will simply suggest an advantage substance dualists may have in responding to his argument. Churchland assumes that mental properties are exemplified by 'large physical systems' that display 'complex internal organization'; and he alleges that this counts against the fundamentality of phenomenal properties. Property dualists who accept some version of standard materialism may face an objection from this quarter; but most substance dualists do not.

In this paper, I shall take it that property dualism has been rendered reasonable by the zombie arguments, inverted spectrum arguments, and so on; and move on to ask the question: to what extent would property dualism support substance dualism? I shall argue that accepting property dualism makes substance dualism look much better than it otherwise would. (I issue the customary invitation: those who disagree about the value of the arguments for property dualism may take the conclusions of the paper as conditional upon the success of such arguments. Those skeptical of the arguments for property dualism are likely to see me as providing further reason to be suspicious of thought experiments involving zombies and inverted spectra.)

### *3. The Structure of Phenomenal States*

Property dualists about phenomenal states part company when it comes to identifying the *subjects* of the most fundamental phenomenal properties. Stories about inverted spectra and zombies are supposed to show that, had the laws relating brains and conscious states been different, the objects we see would have appeared differently to us, despite precise similarity in the light waves hitting our retinas and the patterns of neural firing in our

brains. Stop signs now appear red, but in the inverted world, they appear purple. Somewhere, qualia have been switched — but what is it that switched properties, what kind of thing has the most fundamental phenomenal properties?

The property dualist has a choice: She can either suppose that qualia are exemplified by some range of things to which the subject is related in experience; or she can regard them as properties had by conscious subjects themselves. Philosophers (and psychologists, when the discipline was younger) have engaged in considerable armchair speculation about the amount and kind of complexity to be found in phenomenal states; and each of the two choices for the subjects of qualia has had its defenders.

Take the kind of experience I have when I see a stop sign in front of me, or I hallucinate a bright red object before me, or I am in some other situation that would lead me to say that something red is in the center of my visual field. To some, it has seemed obvious that *appearing red* is something that can only be done by an object or entity of some kind, distinct from the experiencing subject; to have an experience ‘as of something red’ is to engage in an ‘act’ of sensing which acquires its reddish character from the nature of its ‘object’. To be an ‘act-object theorist’ about a certain kind of phenomenal experience is to attribute a relational structure to the experience. According to an act-object theory, the distinctive qualia of this type of experience belong to something other than the subject of the experience; and differences among similar types of phenomenal state are construed as differences in the properties had by the entities to which the subject is related. G. E. Moore and other sense data theorists took all phenomenal states to have such an act-object structure.<sup>9</sup>

Other philosophers have rejected this act-object account of sensation, claiming that *being appeared to as though there were something red before one* is not a relational property or state; it is a mode of experience or of ‘feeling’, and the fact that a subject has this sort of feeling does not imply that anything distinct from the subject exists or appears to the subject. When it appears to a person as though there is something red in front of him or her, the person is experiencing ‘in a reddish way’ — ‘sensing redly’, as Chisholm put it. The phenomenal quality peculiar to experiences ‘as of something red’ is not borne

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<sup>9</sup> An extreme form of act-object theory is presupposed in Moore’s ‘Refutation of Idealism’ (1903). For defense of the act-object theory, see Jackson (1977, pp. 50-87).

by a thing to which the experiencing subject is related. 'Red', as a term used to describe types of phenomenal experience, is better construed as an adverb modifying the type of feeling or sensing undergone by an experiencing subject; and so such accounts of the structure of experience have been dubbed 'adverbial theories of appearing'.<sup>10</sup>

C. D. Broad considered the relative merits of act-object and adverbial theories under the heading: '*Are Sensations analysable into Act of Sensing and Sensum?*' Broad discerns a kind of continuum of sensation types:

If we consider the various experiences called 'sensations,' we seem to be able to arrange them in an order, starting with those of sight, passing through those of taste and smell, and ending with bodily sensations, like headache. Now, as regards the top members of the series, the analysis into act of sensing and object sensed seems pretty clear. A sensation of red seems clearly to mean a state of mind with a red object, and not to mean a red state of mind.

If we now pass to the other end of the series the opposite seems true. It is by no means obvious that a sensation of headache involves an act of sensing and a 'headachy' object; on the contrary, it seems on the whole more plausible to describe the whole experience as a 'headachy' state of mind. In fact the distinction of act and object seems here to have vanished; and, as there is clearly *something* mental in feeling a headache, just as there is in sensing a red patch, it seems plausible to hold that a sensation of headache is an unanalysable mental fact, within which no distinction of act and object can be found.

Now this contrast between the top and the bottom members of the series would not greatly matter, were it not for the fact that the two kinds of sensation seem to melt insensibly into each other at the middle of the series. It is about equally plausible to analyse a sensation of a sweet taste into an act of sensing and a sweet sensum, or to treat it as an unanalysable mental fact, having no object, but possessing the property of sweetness. (Broad 1923, p. 254-5)

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<sup>10</sup> For classic statements of adverbialism, see Ducasse (1951, Ch. 13); and Chisholm (1963).

The continuum naturally tempts systematizing philosophers to develop a theory of sensation based on examples from one end or the other, and then to force the whole spectrum of sensory states to fit into a single (possibly Procrustean) bed. Broad resists the unifying impulse; the states we call ‘sensations’ are so called because of their similar causes (each is ‘the immediate response to the stimulation of a nerve’), but they may be quite different in their intrinsic structure. For present purposes, adverbialism about even one fundamental phenomenal state would be sufficient for the horn of the dilemma to which I shall devote most of my attention.<sup>11</sup>

A view Broad sets to one side is what he calls ‘the *Multiple Relation Theory*’:

The Multiple Relation Theory takes the view that ‘appearing to be so and so’ is a unique kind of relation between an object, a mind, and a characteristic. ... On this type of theory to say that the penny looks elliptical to me is to say that a unique and not further analysable relation of ‘appearing’ holds between the penny, my mind, and the general characteristic of ellipticity. (Broad 1923, p. 237)

William Alston (1999) defends a sophisticated version of the multiple relation theory. But, even though the view is an important one, I largely ignore it here; the differences between the multiple relation theory and adverbialism are insignificant for my purposes. A property dualism that takes the relations of a multiple relation theory like Alston’s as its basic phenomenal types has this much in common with adverbialism: both views imply that the fundamental properties that account for phenomenal differences are exemplified by conscious subjects.

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<sup>11</sup> Act-object theorists take an experience to be a ‘relational state’, involving a person and a sensed particular; while adverbialists take an experience to be a ‘unitary state’, ‘a state of that person not essentially involving anything over and above that person’ (Jackson, 1977, p. 59). At least one philosopher, Franz Brentano, has tried to have it both ways: an experience consists in a relation to a sensed particular; but sensing is an intentional relation holding between a subject and a sensed particular that, as a matter of fact, does not exist. The red patch of color I experience when looking at an apple is not on the surface of the apple, nor anywhere else; it is strictly non-existent (Brentano, pp. 77-100). I put Brentano on the side of the adverbialists, at least for the purposes of the dilemma posed in this paper. The subjects of experience are the only real things available, on his view, to bear the most natural properties in virtue of which phenomenal experiences are similar; so Brentano should say that qualia are exemplified by things that are, themselves, conscious subjects.

The differences among forms of property dualism can be characterized using Gilbert Harman's nice metaphor: property dualists posit 'mental paint' in addition to all the non-mental, physical properties of things (Harman, 1989). They thereby incur an obligation to tell us where the mental paint is to be applied.

The metaphor holds up well in the case of act-object versions of property dualism. Since the fundamental quale kind (or 'paint color') is supposed to be a property of things, in virtue of which they look red to us, it surely deserves the name 'redness', no matter what its subject might be. The property dualist is likely to admit that there is a different property that we sometimes mean by 'red', a physical or dispositional property of surfaces in virtue of which they often cause experiences of the distinctive phenomenal kind; and so the name of the quale should be qualified: it is *phenomenal* redness, the kind of mental paint generated by red objects when normal people see them under ideal lighting conditions — but also generated, in certain circumstances, by non-red objects, non-red strobe lights, drugs, etc. But to what should the act-object property dualist attribute phenomenal red?

Stubenberg (1998, Ch. 7) provides a taxonomy of act-object theories. He takes sense data theories as the natural starting point for thinking about phenomenal qualities — an historically justifiable strategy, as far as the 20<sup>th</sup> century is concerned.<sup>12</sup> According to most sense-data theorists, there are peculiar, mind-dependent entities to which we are related in experience, and phenomenal qualities are mental paint spread over them. Opposed to the sense data theorist is the 'Whole-Hearted Relocationist', who wants to move the qualia from these mental entities to the mind-independent physical objects we perceive around us (Stubenberg 1998, pp. 156-68). Whole-Hearted Relocationism can hardly be endorsed by the property dualist, however. Given the nature of the reasons property dualists posit mental paint, applying it to physical surfaces as an extra quality is hardly plausible. The kind of difference envisaged by inverted spectrum thought experiments, for example, is similar to the kind of difference that could be created by forcing everyone to wear colored spectacles. The chief difference between the two is that, with spectacles, the change is made 'upstream' of the eyes; while in the inverted

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<sup>12</sup> For classic versions of the sense-data theory, see Russell (1917, Chs. 7 and 8); Moore (1922, Chs. 5 and 7); Broad (1925, pp. 140-220); and Price (1932).

world, it is made ‘downstream’, even further from the surface of the stop sign. In itself, the sign is no different in a spectrum-inverted world. Its dispositions to absorb and reflect certain wavelengths remain the same. A difference only shows up when conscious subjects are brought into the picture. If colored spectacles do not change the intrinsic characteristics of stop signs, neither should the more exotic ways of shifting the spectrum of experienced colors that are imagined in typical property dualist arguments.

So the act-object property dualist who dislikes sense data must be what Stubenberg calls a ‘Half-Hearted Relocationist’: someone who strips phenomenal redness from mind-dependent sense data and applies it to the only other material object that is a reasonable candidate — namely, some part of the brain or nervous system, or perhaps to some part of the events going on in the brain or nervous system. The result has been called ‘the colored brain theory’ — or, when odors are involved, the ‘stinking brain theory’.<sup>13</sup> (Given the prevalence of zombies in contemporary discussions, and the dietary habits of zombies, perhaps we should focus on flavors and call the view something like ‘the yummy brain theory’ — though of course philosophical zombies merely *seem* to enjoy the taste of brains.)

The colored brain theory is an unlikely place for act-object property dualists to plant their stakes. Phenomenal redness is supposed to be responsible for the similarity among the parts of a uniformly colored portion of my visual field. A huge range of precise shades of phenomenal redness are responsible for a smoothly varying spread of phenomenal color. So similar qualia must be exemplified over and over again, hundreds or thousands of times, by things in my brain that at least *appear* (to me, as I attend to the contents of my visual field) to be right next to one another. A look at what goes on inside the brain raises Sellars’s famous ‘grain objection’ to identifying phenomenal states with brain states:

The objection asks, for example, how is it that the occurrence of a smooth, continuous expanse of red in our visual experience can be identical with a brain process that must, it would seem, involve particulate, discontinuous affairs such

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<sup>13</sup> For discussion, see Stubenberg (1998, pp. 168-74); and for use of ‘stinking’ in this context, see Price (1932, p. 127), who is evidently quoting Bradley.

as transfers of or interactions among large numbers of electrons, ions, or the like?  
(Maxwell 1978, p. 398)

Maxwell saw the grain objection as an invitation for neuroscientific research to find structural properties of parts of the brain (or of fields within the brain) that better mirror the structures evident in experience.<sup>14</sup> Whatever the ‘neural correlate of an experience of red’ might be, it presumably belongs to groups of neurons (or parts of fields) within the brain. Whatever entities are involved in the neural correlates would seem to be the best candidates, within the brain, for being the subjects of the property dualist’s redness qualia, as well. But then the appearance of spatial continuity of redness in the visual field will doubtless prove highly misleading. The way redness *seems* to be exemplified by the things that have it, and the way it really *is* exemplified by those things, would be radically different. But suppose that is the case. If we can be so drastically mistaken about the nature of phenomenal properties, why should we put any stock in inverted spectrum thought experiments and other a priori arguments for property dualism? Although the topic deserves more consideration than I shall give it, here I simply record my conviction that the colored brain theory is likely to undermine the typical reasons for believing property dualism in the first place.

Giving up the sense-data theory, so as to relocate the qualia, seems to me to be a big mistake, for the act-object property dualist. The visual field is divisible into left and right halves. The act-object analysis of phenomenal consciousness bids us take the parts of this field — or the various things that appear to us in its various parts — seriously, as items to which we are related in experience, items with properties that give our experience its phenomenal flavor. The mental paint does not seem to be spread over surfaces of external objects, nor over parts of our brain; but then where is it spread? J. R. Smythies offered an answer that, however shocking, begins to seem inevitable on an act-object analysis: The paint is spread over sense-data that are spatially extended in *higher dimensions* (Smythies 1956). The visual field is a three- or at least two-dimensional array of sense-data, the parts of which cannot be unproblematically located within the

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<sup>14</sup> See Maxwell (1978, pp. 399-401). Lockwood believes quantum physics can help address the grain objection (2003), though I expect he would reject the act-object theory.

three-dimensional region occupied by the brain. Yet it is *generated by* the brain; and so, on the assumption that effects are spatiotemporally continuous with their causes, a person's sense-data must 'stick out' in directions at right angles from the familiar three to which our bodies are confined. If these extradimensional extrusions can be counted among a person's parts, then being conscious implies that one is, in part, a substance with fundamental properties falling under patently mental types. Even if they should not be called *parts* of the thinkers that have them, such sense data verify some core dualistic theses: they are a kind of thing not found in unconscious material objects, and they are responsible for the fact that we have conscious lives. This gives us, not exactly a dualism of thinkers and physical objects, but at least a dualism of parts of our experiences and physical objects.

For the remainder of this paper, I shall assume that the property dualist who would reject substance dualism must also reject the act-object theory in favor of adverbialism: the subject of phenomenal experience is the very thing that bears the qualia. The metaphor of mental paint must be stretched considerably if it is to be extended to describe property dualisms belonging to this family. (Indeed, Stubenberg drops the metaphor when characterizing these alternatives.) I suppose one might say that, according to the adverbialist, each conscious subject is *suffused* with paint. (A multiple relation version of property dualism is even harder to characterize using the 'paint' metaphor; perhaps one should say that *both* subject and object are painted, or that the paint is applied to a thin band that runs between them.)

I cannot pretend, by means of the brief arguments of this section, to have definitively closed off every avenue of escape for the act-object property dualist who wants to defend garden variety materialism. There may be ways to combine the act-object theory with property dualism that do not require Smythian sense data. There may, for example, be forms of the colored brain theory that are less unstable than I have made out. If phenomenal red and other phenomenal colors are fundamental properties of special parts of my brain, then one could hold that to experience them is simply to be an organism with a functioning brain that contains them (and that is responsive to their presence in some way). My attempts to raise trouble for garden variety materialism will

not work against this sort of view.<sup>15</sup> But the property dualist who does not, with the adverbialist or multiple relation theorist, dip the *subject* in mental paint, must spread her mental paint on *something*. And, among physical objects, no very good candidates present themselves.

#### 4. *A More Plausible Substance Dualism*

Substance dualism and substance materialism are different answers one may give to the question each of us can put by asking, ‘What kind of thing *am* I?’ Ultimately, my conclusion will be that substance dualism should be ‘back on the table’ for the property dualist, given the materialist alternatives. But there are many varieties of substance dualism, some of which should be taken more seriously than others.

Dualists have differed a great deal in what they mean when they say that we are ‘immaterial’ or ‘nonphysical’. Given Descartes’s importance in the history of philosophy, and the importance of dualism within his metaphysics, it is understandable that he has become the paradigmatic dualist; and that his conception of immateriality is the most familiar. Cartesian souls are immaterial in a very strong sense: unlike material objects, they are not spatially located; unlike the material world as Descartes conceived it, they have no parts, but are instead ‘simple substances’; and they are in no way dependent upon the physical world for their continued existence or ability to think.

To make these three doctrines about Cartesian souls essential to any view worthy of the name ‘dualism’ would do pointless violence to its widespread use as a label for a broad family of views about the make-up of human persons. It would be peremptory to define ‘dualism’ so that adherents of animistic religions, spiritualists, and nearly all contemporary philosophers who call themselves ‘substance dualists’ no longer qualify. Yet all depart from one or more Cartesian tenet.

The truth of the matter is that ‘dualistic’ has been used to characterize any of the views on one end of a spectrum with Cartesian dualism close to one end, and

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<sup>15</sup> To foreshadow what is to come: The problem I pose depends upon the fact that a garden variety object is vague. Really, for each such object, there are many massively overlapping precise objects; and something is true of the vague object so long as it is true of all the precise objects that are good candidates for being it. So long as all the overlapping candidates for being the organism or brain must be similarly related to the fundamental phenomenal properties that are supposed to belong to the parts of my brain (on the colored brain theory), phenomenal color could be fundamental, although vague objects experience it.

straightforward versions of materialism on the other. There is no obvious, sharp, cut-off in this spectrum. Views closer to the dualistic end posit entities that lack many of the attributes of ordinary physical objects and their microphysical parts. But sensible dualists will admit that souls have *some* characteristics in common with physical things. Perhaps the maximal difference a dualist might posit between soul and body would be to identify souls with necessarily existing objects, outside of space and time — a dualism according to which persons resemble numbers or Plato's Forms. Has anyone held such a view? Some have said that persons are to their bodies as programs are to the computers that run the programs. And, if programs are understood in a way that makes them quite independent of the particular computers running them, they become abstract objects, mathematical entities. But it is hard to take this analogy very seriously. Surely we are concrete, contingent, and temporal. After all, it is easy to imagine that I could have a 'double' — a person distinct from but exactly similar to myself. However, distinct yet exactly similar programs — conceived as abstract *types* — would seem to make no sense. So few, if any, dualists will be as far out on the spectrum as it is possible to be; almost all dualists, including Descartes, will agree that souls have this much in common with ordinary material things: they are concrete entities, existing in time, and capable of change. If electrons or gluons turn out to be without parts, as some physicists surmise, then Descartes's souls resemble some physical things in a further way: his souls, like electrons and gluons, are simple.

A fixed point on the opposite end of the spectrum is a materialism that says human beings, and their larger parts, are composed of nothing but bits of matter that can also constitute paradigmatically *purely* physical objects — objects devoid of mentality, such as rocks and trees. A philosophical doctrine lies farther to the dualistic side insofar as it posits an entity with a mental life that has fewer attributes in common with the stuff of the paradigmatically physical. Descartes lies somewhere far to the dualistic side of the spectrum, attributing almost nothing to his souls that could be had by ordinary matter. Between, but still well within the dualistic range, lie the bulk of those philosophers who consider themselves dualists today.

All contemporary dualists (among philosophers, at least) admit that the ability to think depends upon the proper functioning of a brain. Hasker, Swinburne, Taliaferro, and

many others depart further, allowing that, when an organism has a sufficiently complex nervous system, it then automatically *also* generates a nonphysical substance to be the subject of that consciousness — an ‘emergent substance’ that remains radically, but not completely, dependent upon the brain for most of its operations and for its continued existence.<sup>16</sup> Some emergent dualists (e.g. Hasker, W. D. Hart, and, long before them, Lotze) are willing to say that souls are located within the brain, present wherever interaction takes place.<sup>17</sup>

The less extreme dualisms are of greater philosophical interest than Cartesianism for a number of reasons. It should not be wholly irrelevant, even to philosophers, that they correspond much more closely than Cartesianism to the dualistic anthropologies that have been central to most human cultures and nearly all religions. Perhaps more importantly, they are more defensible; many of the stock objections to dualism turn out to have no purchase on them. And most arguments for dualism do not require that the soul have all the features Descartes attributed to it; so less radical dualisms are safer, positing no more differences between souls and material objects than are required by the reasons for rejecting materialism. It should be noted, however, that some forms of dualism would not provide a way out of the dilemma that I pose for property dualists. A dualist will prove to be no better off than the average materialist, if she supposes that we are composed of swirling ectoplasm, having boundaries as vague as those of ordinary objects.

##### *5. Garden Variety Substance Materialism*

To the question, ‘What kind of thing am I?’, the materialist answers, ‘A material thing, a thing made entirely of parts that could constitute rocks, stars, or some other utterly unthinking thing.’ But different materialists identify me with different material things; and of course one could be a materialist and select entirely implausible candidates. Descartes mentions some insane materialists who believe ‘that their heads are made of earthenware, or that they are pumpkins, or made of glass’ (Descartes 1984, p. 13). A couple of otherwise sane contemporary philosophers have seriously wondered whether

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<sup>16</sup> See Hasker (1999, pp. 188-97), Swinburne (1997, Ch. 10), and Taliaferro (1994, Ch. 3).

<sup>17</sup> See Hasker (1999, p. 192), Hart (1988, Ch. 10), and Lotze (1885).

we might be tiny physical particles lodged somewhere in our brains (Chisholm, 1978; Quinn, 1997). But more popular by far (and rightly so) are versions of materialism that pick more familiar physical objects to be me — ‘garden variety’ objects.

Some parts of living bodies are what I will call ‘natural parts’: their spatial boundaries are reasonably sharply defined, and, if they are made out of parts themselves, their parts work together to perform some function. Examples include: a single atom within a strand of DNA, the heart, the kidneys, the spine, an individual blood cell, the respiratory system, the entire nervous system, the brain, the cerebrum, a single cerebral hemisphere, and the complete organism (that ‘improper part’ that includes every other). Basically, if it is worth listing in a book about human physiology or biochemistry, it will count as a natural part, for my purposes. I take it that, among physical objects, the most plausible candidates for being a thinker such as I am must at least have the size and shape of one of these natural parts; and they must also include all the parts upon which our ability to think most immediately depends. The natural parts that fit these criteria are primarily: the complete organism I refer to as ‘my body’, the entire nervous system within it, the brain, the cerebrum, and perhaps one or the other single hemisphere of that cerebrum. To be one of the garden variety candidates for being me, then, a thing must be one of these objects (or at least coincide with one of them in size and shape). *Garden variety materialism*, then, will be the thesis that each human person is one of these natural parts (or that each person currently has the same size and shape as one of these natural parts<sup>18</sup>).

The garden variety candidates are all of them vague in their spatial and temporal boundaries. I shall argue that this vagueness raises serious difficulties for garden variety materialism, leaving dualism looking better off — for it will then only be competing with more surprising versions of materialism, ones that posit special kinds of physical object.

Garden variety materialism identifies me with one of the garden variety candidates, a thing that already has a place in our commonsense conception of the world.

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<sup>18</sup> I throw in the qualification for the sake of believers in ‘coincident objects’, the one constituting the other, who might want to say that I am an organism, in virtue of the fact that I am *constituted by* an organism, while denying that I am *identical to* an organism. (They might say this because they believe that I, but not the organism itself, could survive the transplantation of my brain into a different body, for example.) Such philosophers will still count as garden variety materialists if the boundaries of persons are determined by those of the ordinary objects, like human bodies or brains, that constitute them.

Such an object will have relatively natural boundaries, such as those of an organism, or a brain, or even a single hemisphere of a brain. But animals and their organs belong on a spectrum that includes bushes, branches, clouds, mountains, rivers, tidal waves, and all manner of fuzzy entities. All such familiar material objects exhibit vagueness or indeterminacy in their spatial and temporal boundaries. And the strategies rightly implemented to resolve the puzzles posed by vague objects do not seem so satisfactory when applied to *oneself*.

All the garden variety candidates for being the referent of someone's use of the word 'I' appear surprisingly like clouds upon close inspection, vague at their spatial boundaries. Many particles are in the process of being assimilated or cast off; they are neither clearly 'in', nor clearly 'out'. Upon further examination, it even seems to be vague whether some bits of matter are inside or outside of the vague borderland — that is, garden variety objects display 'higher order vagueness', a fact that becomes relevant in the sequel.

Although less relevant here, the temporal boundaries of garden variety objects also display a disturbing fuzziness. No one doubts that meteorologists have considerable freedom in deciding where exactly to draw the line between a hurricane and a mere tropical storm. But animal bodies are not unlike storms in this respect. Examination of the origins and deaths of organisms reveals numerous plausible lines that could be used to mark the divide between living human person and mere mass of organic matter. Pressure to find the first and final moments in the lives of organisms can only force a decision like the one made by the meteorologists. Sharper lines will not be found by those who, with Locke, dismiss biological boundaries in favor of psychological ones. Neo-Lockeans must admit that psychological continuity, like biological life, is a matter of more and less; that personalities emerge, and frequently deteriorate, only gradually.

A garden variety materialist must, therefore, allow that the spatial and temporal indeterminacies of large-scale material objects infect human persons; and that the correct strategies for coping with fuzzy objects should apply to persons, as well. In the next section, I shall consider the natural thing to say about objects with spatially vague boundaries, and show how difficult it is to suppose that we are vague in this way while affirming property dualism.

## 6. *Adverbial Theories and Vague Objects*

Act-object accounts of phenomenal experience arguably lead to sense data and a kind of substance dualism — or so I shall assume. A different sort of difficulty faces the garden variety materialist, if even a few of our fundamental phenomenal states are exemplified by the subjects of consciousness, as they are according to adverbialism and the multiple relation theory (for simplicity, from now on I shall mention only adverbialism). Property dualism and adverbialism, combined, make it difficult to identify human persons with any *garden variety* material objects. A problem arises due to the fact that all the garden variety candidates for being me — chiefly, this organism and this brain — have vague spatial boundaries. While this does not lead directly to substance dualism, it does mean that, for anyone who accepts a dualism of mental and physical fundamental properties, substance dualism should be back in the game.

Adverbialism implies that the thing with the phenomenal property is a subject of experience, a conscious being. But what is this subject, if garden variety materialism is true? A vague object, like an organism or brain. The spatial vagueness of such objects at a given time consists in the fact that many peripheral and even spatially internal particles, atoms, and molecules are not definitely ‘in’, nor definitely ‘out’ — it is not clearly true that they are parts of the body, nor that they are merely parts of the environment. How to understand this vagueness is, of course, philosophically controversial.

I shall assume that the vagueness of these boundaries is not properly construed as due to the fact that, although there is exactly one body or organ in the vicinity, it ‘fades out’ due to various degrees of indeterminacy with which the *part of* relation holds between the single object and many candidates for parthood. Perhaps there are objects indeterminate in their boundaries for such a reason; but treating garden variety objects as vague in this way simply brings more spurious precision into the picture. However many degrees to which particles can be parts — whether it be two, three, or any number up to infinite cardinalities — it is as difficult to believe there are precise answers to the question whether peripheral particles are parts to exactly such-and-such degree as it is to believe there are just two precise answers, ‘in’ or ‘out’.

The most appealing accounts of the vagueness of garden variety objects are theories that blame the indeterminacy of borders upon the existence of a plethora of what are, in some sense, equally good candidates for being the object in question. I set to one side Timothy Williamson's epistemicist theory of vagueness, which has many candidates, exactly one of which wins the prize, but does so for extrinsic and highly contingent reasons — reasons we will never be able to comprehend because of their global scope and complexity. Closely related arguments against garden variety materialism can be made to go through on Williamson's epistemicism; but I confine my discussion to what I take to be the most popular, and most plausible, approach to the vagueness of mountains, clouds, living bodies, and organs: that it is an essentially linguistic phenomenon, due to semantic indecision or underspecification in words like 'mountain', 'cloud', 'human body', and 'brain'. We speak of a human body or brain as though there were just one physical object in the vicinity, when in fact there are many largely overlapping, perfectly precise things, none of which has been specified with enough precision by us to qualify as the one-and-only object of reference.<sup>19</sup>

The combination of many candidates with semantic indecision provides an intuitively compelling explanation of the phenomenon of vagueness in objects like clouds and mountains. Numerous batches of molecules are equally good candidates for being a certain cloud; many parcels of earth and rock are equally good candidates for being a certain mountain. We have simply not done enough to single out any one of these precise objects as the subject of our vague thought and talk; instead, we gesture indeterminately at all of them. None is intrinsically more eligible to be what we mean, so there is no unique referent of terms like 'Mount Everest' and demonstrative expressions like 'that cloud' (pointing). The more closely one inspects a living human body or brain, the more it looks like a cloud, storm, or swarm of insects. It is vague in its outer spatial boundaries; and, of many things located inside its skin, it is a vague matter whether and when they become parts of it. As with clouds and mountains, the vagueness of bodies and brains is accounted for by pointing out that there are many equally eligible candidates for being 'the body' and 'the brain', and we have failed to do enough to determine which

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<sup>19</sup> For important versions of such a theory, see Fine (1975); and McGee and McLaughlin (1994). David Lewis endorses such an account; see Lewis (1986, p. 244).

one we are talking about. And I shall assume that, if some property is not had by *all* the eligible candidates for being the brain, organism, table, etc., then it is wrong to say that the brain, organism, or table definitely has the property. I assume, then, some form of supervenience about the truth of vague sentences.

### *7. From Property Dualism (and Adverbialism) to Speculative Materialism*

Property dualism implies that the phenomenal properties are extremely natural, as fundamental as the explanatorily basic properties that will be mentioned in ‘final physics’. There are obviously lawful correlations between various kinds of nervous stimulation and phenomenal states (e.g., stop signs always appear the same way to me under similar conditions). And laws themselves can display fundamentality, but of a slightly different sort. Law-like generalizations could mention none but fundamental properties, yet not be fundamental laws — e.g., it is a matter of nomological necessity that, if a thing is either an electron or a proton, it will either deflect an approaching electron to such and such degree, or attract it to so-and-so degree. But this sort of law-like statement derives its modal force from other laws. The fundamental laws are ones that do not hold in virtue of others. I shall assume that, when there are perfectly natural properties generated in law-like ways, there must be some fundamental laws governing their generation. Thus the property dualist must suppose that some laws about the generation of qualia are fundamental. I doubt whether we have any names for the most fundamental qualia; all our terms for them may be vague. But if we ever did manage to state the basic laws about the generation of qualia by brain activity, the terms in those laws stand for the most precise respects of phenomenal resemblance among subjects.

Given what we know about the close connections between brain activity and phenomenal experience in our own case, laws of qualia generation have, *very* roughly, the form: whenever some neurons are organized and behaving like *so* — e.g., like the ones in my brain right now — something-or-other will be caused to have such-and-such fundamental phenomenal property. (The fundamental laws might not be about neurons, per se; they might relate qualia to some more general feature of the brain’s activity —

e.g., to changes in some kind of ‘pattern’<sup>20</sup>, or in information-state.<sup>21</sup>) Given adverbialism, whatever has this phenomenal property will be a conscious subject — one that feels a very precise pain, senses a very precise smell, etc. But what is the something-or-other caused to have the property in question? According to garden variety materialism, it is a familiar object such as a brain or a complete human organism.

If ‘brain’ or ‘human organism’ are terms for garden variety, vague material objects, and I am such a thing, then there must be many equally eligible candidates for being this brain or this organism. There is no problem, in principle, with vague macroscopic objects exemplifying fundamental, perfectly precise properties. All that is necessary is that each of the eligible candidates has the fundamental property. But, given that the candidates differ from one another in tiny ways, and these tiny differences supervene upon differences at more fundamental levels, it should be very surprising if it ever happens. It is easy for a vague object such as a table to weigh *about* 20 kilograms, because every eligible candidate for being the table has a mass very close to 20 kilograms — some a little more, some a little less. It is much harder for a table to weigh precisely 20 kilograms; some table candidates will, but very many will be ever so slightly heavier or lighter, rendering it less than completely accurate to say that the table has *exactly* that mass.

Adverbialism about some fundamental phenomenal properties requires that there be a family of perfectly natural properties which can be had only by conscious beings. If I am conscious in one of these precise ways, and I am an ordinary vague object, the laws governing the generation of qualia must insure that every eligible candidate for being me has this perfectly precise property. How likely is it that the fundamental laws select all and only the eligible candidates?

I suppose a property dualist should grant that it is *possible* that the natural process of qualia generation is *prodigal* in the production and distribution of fundamental phenomenal properties; that the brain generates very many instances of each phenomenal type, one for each of very many distinct but overlapping physical objects. But the defender of garden variety materialism must hope for more than that. The firing of

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<sup>20</sup> See Robinson (2004, pp. 207-226).

<sup>21</sup> See Chalmers (1996, Ch. 8).

neurons that causes something to have adverbial qualia must somehow target *all and only* the precise objects that are eligible candidates for being what we mean by ‘organism’ or ‘brain’. The fundamental physical laws governing qualia generation, even if they are prodigal in the number of instances produced, should not be expected to choose precise objects in exactly the same way that our everyday terms for brains and bodies choose many objects; that would be to attribute to nature itself a touching deference to our linguistic practices and to our rough-and-ready concepts.

Prodigal laws of qualia generation might choose a group of physical objects that leaves out some of the candidates for identity with this brain or organism; or they might choose all the candidates *and more*; or they might, just possibly, choose all and only the eligible candidates. In each case, I would fail to be a garden variety object.

If fundamental laws of adverbial-qualia-generation do not select every single one of the eligible candidates for being this organism or brain, the organism or brain will be at best *sort of* conscious. Whatever else I know about myself right now, I know that I am *definitely* conscious; so if a smaller thing or things *definitely* have the adverbial qualia, I am not the thing that is only indefinitely conscious; I am that smaller thing, or I am one of those things, or perhaps I am indefinitely identical with each of them — ‘I’ might be a vague term, indeterminate in reference among many of the things that truly have the qualia generated by my brain. On the hypothesis that one or a few candidates are truly conscious, my boundaries are not those of an ordinary, garden variety, macroscopic object; they are determined not by our ordinary, rough-and-ready standards for being part of an organism or organ (which advert to vague notions like cohesion and functional role); instead, my boundaries are set by a special, sharp ‘halo’, a boundary drawn by possession of the precise qualia. The property dualist should admit that this *might* be so. And the resulting view is materialism, fair enough; but it is a kind of *speculative* materialism, not the kind of materialism that finds a thinking person to be just another garden variety physical object of the sort we clothe, or remove surgically, or push around. The precise material object I am becomes a matter of theoretical speculation, determined by laws linking brain activity with a particular physical object or objects, presumably somewhere in the vicinity of my brain.

Suppose the laws select *more* than all of the eligible candidates — including, among the many objects that share my adverbial phenomenal states, some objects with parts that fall just outside all of the garden variety candidates for being this brain or body. In that case, there are larger objects of which this brain or body is a part, and it is just as true of them that they are conscious as it is true of me. Any object that largely overlaps an eligible candidate for being me, and that shares my conscious experience, ought to be a good candidate for being me; so, unless these slightly larger things differ drastically from the slightly smaller things, garden variety materialism is once again false — a halo surrounds a different collection of precise objects from the eligible candidates for being this brain or body. Although words like ‘brain’ and ‘body’ are not vague terms used to refer to such a thing, we could easily invent some terms; indeed, given the platitude that *I* am the subject of my conscious states, perhaps ‘I’ in my mouth is already a term indeterminate in reference among *these* material objects.

Even if the laws are prodigal, causing many physical objects to be conscious, there remains a kind of magic halo surrounding me (or, rather, around the sum of all the candidates for being me) — and this is something one does not find in ordinary, vague, macroscopic objects. The halo remains even in the wildly lucky case of laws that select *just* the eligible candidates for being this brain or body. In a garden variety object, there are not just bits of matter that are neither definitely part of, nor definitely not part of, the object — there are not just things one might call ‘borderline parts’. There is also no sharp cut-off between the bits of matter that are, and are not, borderline parts. Notoriously, this requires higher-order vagueness; but higher-order vagueness would be obliterated by precise facts about which physical objects have adverbial qualia.

Prodigal laws of qualia production are needed by the adverbialist property dualist, if conscious persons are to have a *chance* of being garden variety bodies or brains. But even then, the chance is slim; it is much more likely that I am a physical object of a different size and shape — one determined by the sizes and shapes of whatever things are caused to have my qualia. A host of overlapping conscious subjects could make ‘I’ a vague term, so that it would be true to say that I am a vague object. Still, my vagueness would be unlike that of garden variety objects, and the resulting metaphysics of persons should count as a form of speculative materialism.

If phenomenal properties are genuinely new and genuinely fundamental, there is little reason — other than our affection for certain familiar, macroscopic, vague objects — to suppose they are produced in abundance and exemplified willy-nilly by a host of subjects that overlap the neurons that are their source. Non-prodigious laws force the materialist to adopt a speculative frame of mind. Brains generate adverbial qualia, which are not exemplified many times over, but rather by just one or perhaps a handful of physical objects. The thesis would not be so bad, were there a heretofore unnoticed kind of physical thing, distinct from the familiar examples of macroscopic objects, suitable to be the true bearer of qualia and the true subject of consciousness. But when one looks around for precisely demarcated physical entities to receive the adverbialist's phenomenal states, no natural candidates present themselves. No cell or molecule or atom in the brain is distinguished in a way that would suggest that it is a better candidate than any of its rivals for being conscious; there seems no precise physical entity in the vicinity that fundamental laws could pick out in virtue of some special physical status, either intrinsic (for example, a special type of particle, atom, or molecule) or extrinsic (for example, a special place in my brain where only one particle, atom, or molecule could be located). Of course, it might be that the precise subjects of phenomenal states are one or many tiny particles selected randomly — in virtue of indeterministic laws, say — from among those in my brain; or that the subjects are randomly chosen larger portions of the matter in my head. Perhaps different regions of my brain are chosen at different times, depending upon the location of the brain activity causing the experience. Speculative materialisms could take many forms; many different algorithms could be proposed to link neural activity with some specific material object or objects, or perhaps with some portion of a field, or even with points of space-time. But, given all the precise objects in the vicinity, there is a 'pairing problem': what natural feature (intrinsic or extrinsic) of a physical entity in the vicinity of my brain could figure in fundamental laws selecting one or several such entities to be the bearer of the newly generated phenomenal property? There is no obvious candidate, so far as I know. Perhaps the special part of the brain has yet to be discovered; therein lies a research program! Perhaps the laws about qualia generation choose physical objects to be experiencers in some indeterministic way, or the laws are strange ones, linking particular neural events with particular physical

things but not in virtue of any natural relation that can be seen to hold between the neural events and those particular things.

In any case, property dualism and adverbialism lead the materialist into dark speculations about the true location and physical nature of persons. I do not say that such speculation would be unjustified, or scientifically unfruitful; but I do claim that those willing to engage in it are not in a position to scoff at the speculations of the emergent dualists.

#### *8. Emergent Dualism: Back on the Table for the Adverbialist*

Either the fundamental laws of adverbial qualia generation are prodigal, or not. If prodigal, there are many physical objects caused to have each of ‘my’ experiences; in which case, I could believe that I am one of them or, better, that ‘I’ is ambiguous or indeterminate in its reference to many of them — but I should *not* suppose that the ambiguity lines up with the ambiguity or indeterminacy in our use of words for garden variety objects belonging to biological kinds. If the laws are less prodigal, and more choosy — so that neural activity causes only one instance, or only a few instances, of each quale — the materialist can hardly pretend to know the size and shape of a conscious person; as a matter of empirical fact, there are no promising candidates for being the unique, conscious physical object in the vicinity of a human brain or body.

The emergent dualist is bound to point out that another possibility remains: the possibility that, as in other circumstances in which a new fundamental property is exemplified, the phenomenal states come with a new subject. And of course this is exactly what the dualist believes to be the case. Once there is neural activity sufficient to generate consciousness, a subject for that consciousness is also generated. Given the perfect naturalness of the properties that are newly instantiated, one should suppose that any subject of such properties is itself as natural in kind as a fundamental particle.<sup>22</sup>

The details of the mechanism by which brains generate souls remain, admittedly, as speculative as the search for a special conscious particle or a precisely demarcated conscious chunk of brain matter. Perhaps there is some minimal level of neural activity

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<sup>22</sup> Fledgling attempts to think seriously about the relevance of this possibility to the sciences of physics, psychology, and linguistics can be found in Baker and Goetz (2011).

that could be identified as *the* sustaining cause of the soul. Perhaps, for every brain-and-soul pair at every time, there is a single pattern of neural firing that is responsible for the soul's overall phenomenal state, then and there. I suppose that the following hypothesis is more likely: that many overlapping sets of events occur in the brain, none of which is the minimal cause of the soul's ongoing existence, nor the single cause of its overall phenomenal state. With many overlapping patterns of neural firing, each lawfully sufficient for the existence of a soul with the same phenomenal states, there could still be just one soul, its existence and phenomenal state simply *overdetermined*. There need be no vagueness about which pattern generates the subject of consciousness — in fact, on this supposition, *many* are equally responsible — nor about how many subjects there are.

Emergent dualism is clearly not the only coherent way to combine property dualism with adverbialism about the most natural phenomenal states. But, given the unlikelihood that the laws of qualia-generation choose just the macroscopic candidates that have captured *our* attention, garden variety materialism is extremely unlikely to be true. And more speculative forms of materialism become quite bizarre, so long as no precise, physically special parts of the brain (or special fields or special sets of space-time points inside the brain) present themselves. The substance dualist alternative is to suppose that phenomenal states come with their own natural kind of subject, like new fundamental particles. Property dualists ought to accept this as a genuine possibility — a speculative hypothesis worth taking seriously, especially if there are no promising leads in the search for a physical alternative.<sup>23</sup>

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