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Realistic Monism: Why Physicalism Entails Panpsychism

1 PHYSICALISM

I take physicalism¹ to be the view that every real, concrete phenomenon in the universe is . . . physical. It is a view about the actual universe, and I am going to assume that it is true. For the purposes of this paper I will equate ‘concrete’ with ‘spatiotemporally (or at least temporally) located’, and I will use ‘phenomenon’ as a completely general word for any sort of existent. Plainly all mental goings on are concrete phenomena.²

What does physicalism involve? What is it, really, to be a physicalist? What is it to be a *realistic* physicalist, or, more simply, a *real* physicalist? Well, one thing is absolutely clear. You’re certainly not a realistic physicalist, you’re not a real physicalist, if you deny the existence of the phenomenon whose existence is more certain than the existence of anything else: experience, ‘consciousness’, conscious experience, ‘phenomenology’, experiential ‘what-it’s-likeness’, feeling, sensation, explicit conscious thought as we have it and know it at almost every waking moment. Many words are used to denote this necessarily occurrent (essentially non-dispositional) phenomenon, and in this paper I will use the terms ‘experience’, ‘experiential phenomena’, and ‘experientiality’ to refer to it.

Full recognition of the reality of experience, then, is the obligatory starting point for any remotely realistic version of physicalism. This is because it is the obligatory starting point for any remotely realistic (indeed any non-self-defeating) theory of what there is. It is the obligatory starting point for any theory that can legitimately claim to be ‘naturalistic’ because experience is itself the fundamental given natural fact; it is a very old point that there is nothing more certain than the existence of experience.

This paper develops parts of ‘Agnostic materialism’ (Strawson 1994: 43–105, especially 59–62, 72, 75–7) and Essay 1 and inherits their debt to Nagel 1974.

¹ I have replaced the word ‘materialism’ by ‘physicalism’ and speak of ‘physical stuff’ instead of ‘matter’ because ‘matter’ is now specially associated with mass although energy is just as much in question, as indeed is anything else that can be said to be physical, e.g. spacetime itself—or whatever underlies the appearance of spacetime.

² More strictly, ‘concrete’ means ‘not abstract’ in the standard philosophical sense of ‘abstract’, given which some philosophers hold that abstract objects—e.g. numbers, or concepts—exist and are real objects in every sense in which concrete objects are. I take ‘spatiotemporal’ to be the adjective formed from ‘spacetime’, not from the conjunction of space and time.

It follows that real physicalism can have nothing to do with *physicalism*, the view—the faith—that the nature or essence of all concrete reality can in principle be fully captured in the terms of *physics*. Real physicalism cannot have anything to do with physicalism unless it is supposed—obviously falsely—that the terms of physics can fully capture the nature or essence of experience.³ It is unfortunate that ‘physicalism’ is today standardly used to mean physicalism because it obliges me to speak of ‘real physicalism’ when really I only mean ‘physicalism’—realistic physicalism.

Real physicalism, then, must accept that experiential phenomena are physical phenomena. But how can experiential phenomena be physical phenomena? Many take this claim to be profoundly problematic (this is the ‘mind–body problem’). This is usually because they think they know a lot about the nature of the physical. They take the idea that the experiential is physical to be profoundly problematic *given what we know about the nature of the physical*. But they have already made a large and fatal mistake. This is because we have no good reason to think that we know anything about the physical that gives us any reason to find any problem in the idea that experiential phenomena are physical phenomena. If we reflect for a moment on the nature of our knowledge of the physical, and of the experiential, we realize, with Eddington, that ‘no problem of irreconcilability arises’.⁴

A very large mistake. It is perhaps Descartes’s, or perhaps rather ‘Descartes’s’, greatest mistake,⁵ and it is funny that in the past fifty years it has been the most fervent revilers of the great Descartes, the true father of modern materialism, who have made the mistake with most intensity. Some of them—Dennett is a prime example—are so in thrall to the fundamental intuition of dualism, the intuition that the experiential and the physical are utterly and irreconcilably different, that they are prepared to deny the existence of experience, more or less (c)overly, because they are committed to ‘physicalism’, that is, physicalism.⁶

³ For a standard argument that this is impossible in principle, see e.g. Strawson 1994: 62–5.

⁴ Eddington 1928: 260; the thought was not new. In the background stood Arnauld 1641; Locke 1689; Hume 1739–40; Priestley 1777; and many others—see Essay 1: §12. Kant makes the point very clearly, on his own special terms. See e.g. 1781–7: A358–60, A380, and B427–8, where he remarks that the ‘heterogeneity’ of mind and body is merely ‘assumed’ and not known.

⁵ I think that, in his hidden philosophical heart, he did not make it (he is certainly not a ‘substance dualist’ as this expression is currently understood; see Clarke 2003). Arnauld saw the problem clearly, and Hume (1739–40: 159/1.3.14.8) diagnosed the mistake definitively in two lines, with specific reference to the Cartesians, but the twentieth century—philosophical division—wasn’t listening.

⁶ Dennett conceals this move by *looking-glassing* the word ‘consciousness’ (his term for experience) and then insisting that he does believe that consciousness exists (to looking-glass a term is to use a term in such a way that whatever one means by it, it excludes what the term means—see Essay 10). As far as I can understand them, Dretske, Tye, Lycan, and Rey are among those who do the same. It seems that they still dream of giving a reductive analysis of the experiential in non-experiential terms. This, however, amounts to denying the existence of experience, because the nature of (real) experience can no more be specified in wholly non-experiential terms than the nature of the (real) non-experiential can be specified in wholly experiential terms. In the normal case, of course, reductive identification of X with Y is not denial of the existence of X. The reductive claim is ‘X exists, but it is really just this (Y)’. In the case of experience, however, to say that it exists but is really just something whose nature can be fully specified in wholly non-experiential, functional terms is to deny its existence. ‘But what is this supposed thing you say we’re denying?’

‘They are prepared to deny the existence of experience.’ At this we should stop and wonder. I think we should feel very sober, and a little afraid, at the power of human credulity, the capacity of human minds to be gripped by theory, by faith. For this particular denial is the strangest thing that has ever happened in the whole history of human thought, not just the whole history of philosophy. It falls, unfortunately, to philosophy, not religion, to reveal the deepest woo-woo of the human mind. I find this grievous, but, next to this denial, every known religious belief is only a little less sensible than the belief that grass is green.⁷

Realistic physicalists, then, grant that experiential phenomena are real concrete phenomena—for nothing in life is more certain—and that experiential phenomena are therefore physical phenomena. It can sound odd at first to use ‘physical’ to characterize mental phenomena like experiential phenomena,⁸ and many philosophers who call themselves materialists or physicalists continue to use the terms of ordinary everyday language, that treat the mental and the physical as opposed categories.

say the deniers. It’s the thing to which the right reply to the question ‘What is it?’ is, as ever, the (Louis) Armstrong–Block reply ‘If you gotta ask, you ain’t never gonna get to know’ (Block 1978). It’s the thing whose deniers say that there is no non-question-begging account of, to which the experiential realist’s correct reply is: ‘It’s question-begging for you to say that there must be an account of it that’s non-question-begging in your terms.’ Such an exchange shows that we have reached the end of argument, a point further illustrated by the fact that reductive idealists can make exactly the same ‘You have no non-question-begging account’ objection to reductive physicalists that reductive physicalists make to realists about experience: ‘By taking it for granted that the physical is something that can (only) be specified in non-mental terms, you (reductive physicalists) simply beg the question against reductive idealists.’ It’s striking that the realist notion of the physical that present-day physicalists appeal to was thought to be either without warrant or unintelligible by many of the leading philosophers of the twentieth century. Many were in effect reductive idealists about the physical, and Quine famously compared belief in physical objects to belief in the gods of Homer (1951: 44).

⁷ Dennett has suggested that ‘there is no such thing [as] . . . phenomenology’ and that any appearance of phenomenology is, somehow, wholly the product of some cognitive faculty, the ‘judgment module’ or ‘semantic intent module’ that does not itself involve any phenomenology. ‘*There seems to be phenomenology,*’ he concedes, ‘but it does *not* follow from this undeniable, universally attested fact that *there really is* phenomenology’ (1991b: 365–6). It is unclear what Dennett means by ‘phenomenology’, but whatever he means this move fails immediately if it is taken as an objection to the present claim that we can be certain both that there is experience and that we can’t be radically in error about its nature. It fails for the simple reason that for there to seem to be rich phenomenology or experience just is for there to be such phenomenology or experience. To say that its apparently sensory aspects (say) are in some sense illusory because they are not the product of sensory mechanisms in the way we suppose, but are somehow generated by merely cognitive processes, is just to put forward a surprising hypothesis about part of the *mechanism* of this rich seeming that we call experience or consciousness. It is in no way to put in question its existence or reality. Whatever the process by which the seeming arises, the end result of the process is, as even Dennett agrees, at least this: that it *seems* as if one is having phenomenally rich experience of Beethoven’s eighth quartet or an Indian wedding. And if there is this seeming, then, once again, there just is phenomenology or experience (adapted from Strawson 1994: 51–2).

In denying that experience can be physical, Dennett and his kind find themselves at one with many religious believers. This seems at first ironic, but the two camps are deeply united by the fact that both have unshakable faith in something that lacks any warrant in experience. That said, the religious believers are in infinitely better shape, epistemologically, than the Dennettians.

⁸ For purposes of argument I make the standard assumption that while all experiential phenomena are mental phenomena, the converse is not true.

It is, however, precisely physicalists (real physicalists) who cannot talk this way, for it is, on their own view, exactly like talking about cows and animals as if they were opposed categories. Why? Because every concrete phenomenon is physical, according to them. So all mental (experiential) phenomena are physical phenomena, according to them; just as all cows are animals. So when physicalists—real ones—talk as if the mental (experiential) and the physical were entirely different all they can really mean to be doing is to distinguish, within the realm of the physical, which is the only realm there is, according to them, between mental (experiential) features of the physical, and non-mental (non-experiential) features of the physical.

As a real physicalist, then, I hold that the mental/experiential is physical, and I am happy to say, along with many other physicalists, that experience is ‘really just neurons firing’, at least in the case of biological organisms like ourselves. But when I say these words I mean something completely different from what many physicalists have apparently meant by them. I certainly don’t mean that all characteristics of what is going on, in the case of experience, can be described by physics and neurophysiology or any non-revolutionary extensions of them. That idea is crazy. It amounts to radical ‘eliminativism’ with respect to experience, and it is not a form of real physicalism at all.⁹ My claim is different. It is that experiential phenomena ‘just are’ physical, so that there is a lot more to neurons than physics and neurophysiology record (or can record). No one who disagrees with this is a real physicalist, in my terms.

In Essay 1 I considered some objections to the claim that the position I have just outlined can really be called a physicalist position. I did my best to answer them and ended concessively, allowing that one might better call the position ‘experiential-and-non-experiential monism’ rather than ‘real physicalism’. It is, in any case, the position of someone who (a) fully acknowledges the evident fact that there is experiential being in reality, (b) takes it that there is also non-experiential being in reality, and (c) is attached to the ‘monist’ idea that there is, in some fundamental sense, only one kind of stuff in the universe.

The objectors then picked on the word ‘monist’, and I considered a further concession. You can call my position ‘experiential-and-non-experiential ?-ism’, if you like, and opt out of the monism-dualism-pluralism oppositions of classical metaphysics. Perhaps you can simply call it ‘?-ism’.¹⁰ But then you will have to allow that the existence of experiential being at least is certain, and is not put in question by the ‘?’—so that it would be better to call it ‘experiential ?-ism’. And if you then want to insist, in line with all standard conceptions of the physical, that non-experiential being also exists, then you will also need to signal the fact that the non-experiential is not put in question by the ‘?’. In which case you may as well go back to calling the position ‘experiential-and-non-experiential ?-ism’.

⁹ This follows from the fact that current physics contains no predicates for experiential phenomena, and that no non-revolutionary extension of it (no currently conceivable extension of it—see n3) could do so.

¹⁰ A suggestion made by Sebastian Gardner, nearly twenty years ago.

I persist in thinking that ‘physicalism’, ‘real physicalism’, is a good name for my position in the current context of debate, but it’s time to admit that in my understanding real physicalism doesn’t even rule out panpsychism—which I take to be the view that the existence of every real concrete thing involves experiential being, even if it also involves non-experiential being. If this seems a little colourful then it’s time to read Locke on substance again.¹¹

Surely I’ve pushed myself over the edge? How can I say that ‘physicalism’ is an acceptable name for my position? Because I take ‘physical’ to be a natural-kind term whose reference I can sufficiently indicate by drawing attention to tables and chairs and—as a realistic physicalist—experiential phenomena.¹² The physical is whatever general kind of thing we are considering when we consider things like tables and chairs and experiential phenomena. It includes everything that concretely exists in the universe. If everything that concretely exists is intrinsically experience-involving, well, that is what the physical turns out to be; it is what energy (another name for physical stuff) turns out to be. This view does not stand out as particularly strange against the background of present-day science, and is in no way incompatible with it.

I don’t *define* the physical as concrete reality, as concrete-reality-whatever-it-is; obviously I can’t rule out the possibility that there could be other non-physical (and indeed non-spatiotemporal) forms of concrete reality. I simply fix the reference of the term ‘physical’ by pointing at certain items and invoking the notion of a general kind of stuff. It is true that there is a sense in which this makes my use of the term vacuous, for, relative to our universe, ‘physical stuff’ is now equivalent to ‘real and concrete stuff’, and cannot be anything to do with the term ‘physical’ that is used to mark out a position in what is usually taken to be a substantive debate about the ultimate nature of concrete reality (physicalism vs immaterialism vs dualism vs pluralism vs . . .). But that is fine by me. If it’s back to Carnap, so be it.¹³

Have I gone too far? It seems to me that to go this far is exactly the right thing to do at this point in the debate. It’s worth it if it helps us to get back to a proper (realistic) openmindedness. But anyone who prefers to call my position ‘realistic monism’ instead of ‘real physicalism’ should feel free to do so.¹⁴

2 ‘IT SEEMS RATHER SILLY . . .’

This may all seem a little giddy, so I will now rein things in a little by making three conventional substantive assumptions about the physical for purposes of argument,

¹¹ Locke 1689: 2.23 and 4.3.6.

¹² It’s striking that analytic philosophers and psychologists have talked so much about natural-kind terms but have failed to see that ‘physical’ is a paradigmatic example of such a term in every sense in which ‘gold’ is.

¹³ See Carnap 1950.

¹⁴ It is less certain that there is non-experiential stuff than that there is experiential stuff, and in most ears ‘real physicalism’ signals commitment to the existence of non-experiential stuff in a way that ‘realistic monism’ does not.

using the term ‘ultimate’ to denote a fundamental physical entity, an ultimate constituent of reality, a particle, field, string, brane, simple, whatever:

- [1] there is a plurality of ultimates (whether or not there is a plurality of types of ultimates)¹⁵
- [2] everything physical (everything physical that there is or could be) is constituted out of ultimates of the sort we actually have in our universe
- [3] the universe is spatiotemporal in its fundamental nature.¹⁶

I do not, however, think that I need these assumptions in order to show that something akin to panpsychism is not merely one possible form of realistic physicalism, real physicalism, but the only possible form, and, hence, the only possible form of physicalism *tout court*. Eddington is one of those who saw this clearly, and I am now going to join forces with him and ask you to be as tolerant of his terminological loosenesses and oddities as I hope you will be of my appeals to intuition.¹⁷

One thing we know about physical stuff, given that (real) physicalism is true, is that when you put it together in the way in which it is put together in brains like ours, it regularly constitutes—is, literally is—experience like ours. Another thing we know about it, let us grant, is everything (true) that physics tells us. But what is this second kind of knowledge like? Well, there is a fundamental sense in which it is ‘abstract’, ‘purely formal’, merely a matter of ‘structure’, in Russell’s words.¹⁸ This is a well established but often overlooked point.¹⁹ ‘Physics is mathematical’, Russell says, ‘not because we know so much about the physical world’—and here he means the non-mental, non-experiential world, in my terms, because he is using ‘mental’ and ‘physical’ conventionally as opposed terms—

but because we know so little: it is only its mathematical properties that we can discover. For the rest, our knowledge is negative The physical world is only known as regards certain abstract features of its space-time structure—features which, because of their abstractness, do not suffice to show whether the physical world is, or is not, different in intrinsic character from the world of mind.²⁰

¹⁵ I believe that cosmology raises serious doubts about (Leibnizian) [1]. A powerful rival (Spinozistic) view is that there is at bottom just one thing or substance, e.g. spacetime, or whatever underlies all spacetime appearances. But [1] does not beg any important questions. If anything, it makes things more difficult for me.

¹⁶ This is in doubt in present-day physics and cosmology, for ‘rumors of spacetime’s impending departure from deep physical law are not born of zany theorizing. Instead, this idea is strongly suggested by a number of well-reasoned considerations’ (Greene 2004: 472; see also 473–91). Note that if temporality goes, i.e. not just spacetime as we currently understand it but temporality in any form, then experience also goes, given that experience requires time. One of the fine consequences of this is that there has never been any suffering. But no theory of reality can be right that has the consequence that there has never been any suffering.

¹⁷ I came upon Eddington’s book *The Nature of the Physical World* in a holiday house in Scotland in 1999.

¹⁸ 1927a: 392, 382; 1956: 153; 1927b: 125.

¹⁹ It takes time to assimilate it fully. It cannot be simply read off the page.

²⁰ 1948: 240; see also 247. Russell’s overall view is that ‘we know nothing about the intrinsic quality of physical events except when these are mental events that we directly experience’ (1956: 153), and that ‘as regards the world in general, both physical and mental, everything that we know

Eddington puts it as follows. ‘Our knowledge of the nature of the objects treated in physics consists solely of readings of pointers [on instrument dials] and other indicators’. This being so, he asks, ‘what knowledge have we of the nature of atoms that renders it at all incongruous that they should constitute a thinking object?’ Absolutely none, he rightly replies: ‘science has nothing to say as to the intrinsic nature of the atom’. The atom, so far as physics tells us anything about it,

is, like everything else in physics, a schedule of pointer readings [on instrument dials]. The schedule is, we agree, attached to some unknown background. Why not then attach it to something of a spiritual [i.e. mental] nature of which a prominent characteristic is *thought* [=experience, consciousness]. It seems rather *silly* to prefer to attach it to something of a so-called ‘concrete’ nature inconsistent with thought, and then to wonder where the thought comes from. We have dismissed all preconception as to the background of our pointer readings, and for the most part can discover nothing as to its nature. But in one case—namely, for the pointer readings of my own brain—I have an insight which is not limited to the evidence of the pointer readings. That insight shows that they are attached to a background of consciousness in which case

I may expect that the background of other pointer readings in physics is *of a nature continuous with that revealed to me in this way,*

even while

I do not suppose that it always has the more specialized attributes of consciousness.

What is certain is that

in regard to my one piece of insight into the background no problem of irreconcilability arises; I have no other knowledge of the background with which to reconcile it. . . . *There is nothing to prevent the assemblage of atoms constituting a brain from being of itself a thinking [conscious, experiencing] object in virtue of that nature which physics leaves undetermined and undeterminable.* If we must embed our schedule of indicator readings in some kind of background, at least let us accept the only hint we have received as to the significance of the background—namely, that it has a nature capable of manifesting itself as mental activity.²¹

This all seems intensely sensible and Occamical. Eddington’s notion of silliness is extremely powerful. Why then—on what conceivable grounds—do so many physicalists simply assume that the physical, in itself, is an essentially and wholly non-experiential phenomenon?

of its intrinsic character is derived from the mental side’ (1927a: 402). See Lockwood 1981, 1989, and Essay 1.

²¹ Eddington 1928: 258–60; my emphasis on ‘silly’. It is remarkable that this line of thought (so well understood by Russell, Whitehead, Eddington, Broad, Feigl, and many others, and equally, in a number of slightly different guises, by Spinoza, Locke, Hume, Kant, Priestley, and many others) disappeared almost completely from the philosophical mainstream in the wake of Smart’s 1959 paper ‘Sensations and brain processes’, although it was well represented by Chomsky (see e.g. Chomsky 1968, 1995). At this point analytical philosophy acquired hyperdualist intuitions even as it proclaimed its monism. With a few honourable exceptions it out-Descartessed Descartes (or ‘Descartes’) in its certainty that we know enough about the physical to know that the experiential cannot be physical.

I write this and think ‘Do they really?’, and this rapid inner question is not rhetorical or aggressive, meaning ‘They must be pretty stupid if they really think, and think they know, that physical stuff is, in itself, and through and through, an essentially non-experiential phenomenon.’ It is, rather, part of a feeling that I must be wrong. I must be doing what philosophers are famous for doing—setting up straw-man opponents who do not really exist while erasing awareness of my real audience, who will protest that of course they aren’t so foolish as to claim to know that physical stuff is, in itself, in its root nature, a wholly non-experiential phenomenon.

My next thought, however, is that I am not wrong. It looks as if many—perhaps most—of those who call themselves physicalists or materialists really are committed to the thesis that

[NE] physical stuff is, in itself, in its fundamental nature, something wholly and utterly non-experiential.

I think they take it, for a start, that ultimates are in themselves wholly and essentially non-experiential phenomena. And they are hardly going out on a limb in endorsing NE, for it seems to be accepted by the vast majority of human beings. I do not, however, see how physicalists can leave this commitment unquestioned, if they are remotely realistic in their physicalism, if, that is, they really do subscribe to the defining thesis of real physicalism that

[RP] experience is a real concrete phenomenon and every real concrete phenomenon is physical.

For if they are real physicalists they cannot deny that when you put physical stuff together in the way in which it is put together in brains like ours it constitutes—is—experience like ours; all by itself. All by itself: there is on their own physicalist view nothing else, nothing non-physical, involved.

The puzzle, for me, is that I’m sure that some at least of those who call themselves physicalists are realistic physicalists—real realists about experiential phenomena. And yet they do I think subscribe to NE—even when they are prepared to admit with Eddington that physical stuff has, in itself, ‘a nature capable of manifesting itself as mental activity’, that is, as experience or consciousness.

3 EMERGENCE

Is this a possible position? Can one hold RP and NE together? I don’t think so, but one defence goes like this:

Experiential phenomena are *emergent* phenomena. Consciousness properties, experience properties, are emergent properties of wholly and utterly non-conscious, non-experiential phenomena. Physical stuff *in itself*; in its basic nature, is indeed a wholly non-conscious, non-experiential phenomenon. Nevertheless when parts of it combine in certain ways, experiential phenomena ‘emerge’. Ultimates in themselves are wholly non-conscious, non-experiential phenomena. Nevertheless, when they combine in certain ways, experiential phenomena ‘emerge’.

Does this conception of emergence make sense? I think that it is very, very hard to understand what it is supposed to involve. I think that it is incoherent, in fact, and that this general way of talking of emergence has acquired an air of plausibility (or at least possibility) for some simply because it has been appealed to many times in the face of a seeming mystery.²² In order to discuss it I am going to take it that any position that combines RP with NE must invoke some notion of emergence, whether or not it chooses to use the word. I will start on familiar ground.

Liquidity is often proposed as a translucent example of an emergent phenomenon, and the facts seem straightforward. Liquidity is not a characteristic of individual H₂O molecules. Nor is it a characteristic of the ultimates of which H₂O molecules are composed. And yet when you put many H₂O molecules together they constitute a liquid (at certain temperatures, at least), they constitute something liquid. So liquidity is a truly emergent property of certain groups of H₂O molecules. It is not there at the bottom of things, and then it is there.

When heat is applied evenly to the bottom of a tray filled with a thin sheet of viscous oil, it transforms the smooth surface of the oil into an array of hexagonal cells of moving fluid called Bénard convection cells.²³ This is another popular example of an emergent phenomenon. There are many chemical and physical systems in which patterns of this sort arise simply from the routine workings of basic physical laws, and such patterns are called ‘emergent’.

This is all delightful and true. But can we hope to understand the alleged emergence of experiential phenomena from non-experiential phenomena by reference to such models? I don’t think so. The emergent character of liquidity relative to its non-liquid constituents does indeed seem shingly easy to grasp. We can easily make intuitive sense of the idea that certain sorts of molecules are so constituted that they don’t bind together in a tight lattice but slide past or off each other (in accordance with van de Waals molecular interaction laws) in a way that gives rise to—is—the phenomenon of liquidity. So too, with Bénard convection cells we can easily make sense of the idea that physical laws relating to surface tension, viscosity, and other forces governing the motion of molecules give rise to hexagonal patterns on the surface of a fluid-like oil when it is heated. In both these cases we move in a small set of conceptually homogeneous shape-size-mass-charge-number-position-motion-involving physics notions with no sense of puzzlement. Using the notion of reduction in a familiar loose way, we can say that the phenomena of liquidity reduce without remainder to shape-size-mass-charge-etc. phenomena—I’ll call these ‘P’ phenomena for short, and assume for now that they are, in themselves, utterly non-experiential phenomena. We can see that the phenomenon of liquidity arises naturally out of, is *wholly dependent on*, phenomena that do not in themselves involve liquidity at all. We can with only a little work suppress our initial tendency to confuse liquidity as it appears to sensory experience (how, we may think, could *this* arise from individual

²² Compare the way in which the word ‘immaterial’ comes to seem to have some positive descriptive meaning although it quite explicitly has none. For a recent helpful taxonomy of types of emergence, see van Gulick 2001; see also Broad 1925 and McLaughlin 1992.

²³ Velarde and Normand 1980.

non-liquid molecules?) with the physical phenomenon of liquidity considered just as such, and see clearly that it is just and wholly a matter of P phenomena.

This notion of total dependence looks useful. It seems plain that there must be a fundamental sense in which any emergent phenomenon, say Y, is wholly dependent on that which it emerges from, say X. It seems, in fact, that this must be true by definition of 'emergent'; for if there is not this total dependence then it will not be true after all, not true without qualification, to say that Y is emergent from X. For in this case at least some part or aspect of Y will have to hail from somewhere else and will therefore not be emergent from X. Plainly this is not how it is with liquidity.²⁴

It is the dependence requirement that causes the problem when it comes to relating the supposedly emergent phenomena of experience to the supposedly wholly non-experiential phenomena from which they supposedly emerge. For it now seems that if experiential phenomena—colour-experiences, for example—really are somehow (wholly) dependent on non-experiential phenomena, as they must be if they are to be truly emergent from them, that is, emergent from them and from them alone, then there must (to quote myself in a former century) be

a correct way of describing things . . . given which one can relate [the experiential phenomenon of] color-experience, considered just as such, to the non-experiential phenomena on which it is supposed to depend, in such a way that the dependence is as intelligible as the dependence of the liquidity of water on the interaction properties of individual molecules. The alternative, after all, is that there should be total dependence that is not intelligible or explicable in any possible physics, dependence that must be unintelligible and inexplicable even to God, as it were.²⁵

I wouldn't put it this way now. The notions of explicability and intelligibility are in origin epistemological, and are potentially misleading because the present claim is not epistemological. It is not, for example, touched by the reply that there is a sense in which all *causal* dependence relations, at least, are ultimately unintelligible to us, even those that seem most intuitively understandable. For although there is a sense in which this is true, in as much all our explanations of concrete phenomena come to an end in things that are simply given, contingent, not further explicable, it has no bearing here. 'Intelligible to God' isn't really an epistemological notion at all, it's

²⁴ Here, then, I reject the commonly embraced but little examined and seemingly wholly mystical notion of emergence that van Gulick (2001) calls 'Radical Kind Emergence' and defines as follows: 'the whole has features that are both [a] different in kind from those had by the parts, and [b] of a kind whose nature is not necessitated by the features of its parts, their mode of combination and the law-like regularities governing the features of its parts.' (Liquidity, in van Gulick's scheme, is by contrast a case of 'Modest Kind Emergence': it is simply that 'the whole has features that are different in kind from those of its parts (or alternatively that could be had by its parts). For example, a piece of cloth might be purple in hue even though none of the molecules that make up its surface could be said to be purple.')

Some hold out for mystico-magical emergence by saying that liquidity is only a resultant phenomenon, not truly emergent, a truly emergent phenomenon being precisely one that does not perspicuously 'reduce' to what it emerges from in the way that the liquid phenomena reduce to non-liquid phenomena. Mystery, however, should be used sparingly. It should not be used to try to solve a problem of reconcilability that turns out on close examination not to exist.

²⁵ 1994: 69.

just a way of expressing the idea that there must be something about the nature of the emerged-from (and nothing else) in virtue of which the emerger emerges as it does and is what it is.

You can get liquidity from non-liquid molecules as easily as you can get a cricket team from eleven things that are not cricket teams. In God's physics, it would have to be just as plain how you get experiential phenomena from wholly non-experiential phenomena. But this is what boggles the human mind. We have, once again, no difficulty with the idea that liquid phenomena (which are wholly P phenomena) are emergent properties of wholly non-liquid phenomena (which are wholly P phenomena). But when we return to the case of experience, and look for an analogy of the right size or momentousness, as it were, it seems that we can't make do with things like liquidity, where we move wholly within a completely conceptually homogeneous (non-heterogeneous) set of notions. We need an analogy on a wholly different scale if we are to get any imaginative grip on the supposed move from the non-experiential to the experiential.

What might be an analogy of the right size? Suppose someone—I will call him pseudo-Boscovich, at the risk of offending historians of science—proposes that all ultimates, all real, concrete ultimates, are, in truth, wholly unextended entities: that this is the truth about their being; that there is *no* sense in which they themselves are extended; that they are real concrete entities, but are nonetheless true-mathematical-point entities. And suppose pseudo-Boscovich goes on to say that when collections of these entities stand in certain (real, concrete, natural) relations, they give rise to or constitute truly, genuinely extended concrete entities; real, concrete extension being in this sense an *emergent property* of phenomena that are, although by hypothesis real and concrete, wholly unextended.

Well, I think this suggestion should be rejected as absurd. But the suggestion that when non-experiential phenomena stand in certain (real, natural, concrete non-experiential) relations they *ipso facto* instantiate or constitute experiential phenomena, experience being an emergent property of wholly and utterly non-experiential phenomena, seems exactly on a par. That's why I offer unextended-to-extended emergence as an analogy, a destructive analogy that proposes something impossible and thereby challenges the possibility of the thing it is offered as an analogy for. You can (to use the letter favoured by the German idealists when either stating or rejecting the law of non-contradiction) get A from non-A for some substitutions for A, such as liquidity, but not all.

—My poor friend. The idea that collections of concrete entities that are truly, genuinely unextended can give rise to or constitute concrete entities that are truly, genuinely extended is actually scientific orthodoxy, on one widely received view of what ultimates are. It's an excellent candidate for being an analogy of the right size.

But this won't do. It won't do when one is being metaphysically straight, not *metaphysically* instrumentalist, or positivist, or operationalist, or phenomenalist, or radical-empiricist, or verificationist, or neo-verificationist or otherwise anti-realist or Protogorean (alas for the twentieth century, in which all these epistemological notions somehow got metaphysicalized). If one is being metaphysically straight, the intuition

that nothing (concrete, spatiotemporal) can exist at a mathematical point, because there just isn't any room, is rock solid.²⁶ It may be added that anything that has, or is well understood as, a field, or that has any sort of attractive or repulsive being or energy, or any area of influence or influencability, *ipso facto* has extension—extension is part of its being—and that although there are plenty of ultimates that have no charge in what physicists call 'the standard model', there are I believe none that are not associated with a field.²⁷ So if the idea of unextended-to-extended emergence is offered as an analogy for non-experiential-to-experiential emergence, I don't think it can help.

I'll take this a little further. Suppose someone proposes that there are real, concrete, intrinsically, irreducibly and wholly *non-spatial* phenomena ('wholly non-S phenomena'), and that when they stand in certain wholly non-spatial relations they give rise to or constitute real, concrete, intrinsically and irreducibly spatial phenomena, ('S phenomena'), these being emergent features of wholly non-S phenomena. Those who claim to find no difficulty in the idea that genuinely unextended concrete entities can give rise to or constitute genuinely extended concrete entities may like to consider this case separately, because they presumably take it that their putative mathematical-point entities are at least spatial entities, at least in the sense of being spatially located. My hope is that even if they think they can make sense of the emergence of the extended from the unextended, they won't think this about the more radical case of the emergence of the spatial from the non-spatial.

But what do I know about this? Almost nothing. With this kind of speculation 'we are got into fairy land', as Hume says, or rather I am, and any impossibility claim on my part, or indeed anyone else's, may seem rash.²⁸ And some may now propose that the 'Big Bang' is precisely a case in which S phenomena are indeed emergent features of wholly non-S phenomena.

Don't believe it, I say, falling back on the *argumentum a visceris*. S phenomena, real, concrete, intrinsically and irreducibly spatial phenomena (bear in mind that we are seeking an analogy for experiential phenomena that we know to be real, concrete, intrinsically and irreducibly experiential) *can't* be emergent properties of wholly non-S phenomena. This is a case where you can't get A from non-A. The spatial/non-spatial case may look like an analogy of the right size for the experiential/non-experiential case, but all it turns up, I suggest, is impossibility. If there is any sense in which S phenomena can be said to emerge from wholly non-S phenomena, then they must fall back into the category of mere appearance, and they are then (by definition,

²⁶ Do not be cowed by physicists or philosophers of physics. (It seems intuitively obvious, by the grace of mathematics, that to introduce real, concrete entities that are infinitely small and therefore metaphysically impossible into one's theory will lead to infinite largenesses popping up in protest elsewhere in one's equations. And so it came to pass.)

²⁷ As I understand it, every particle in the standard model feels a force, even the photon (i.e. photon-photon forces, mediated by—virtual—pair creation/annihilation processes for the sources of the photon). This sort of point no longer seems required, however, in string theory (M-theory or brane theory), given that all the ultimates of M-theory have extension.

²⁸ 1748: 72. It is quite plain, in any case, that people can think (or think they think) anything.

see above) not S phenomena at all. Experiential phenomena, however, cannot do this. They cannot be mere appearance, if only because all appearance depends on their existence.²⁹ If it were to turn out that real S-phenomena can after all emerge from wholly non-S phenomena, all that would follow would be that the spatial case did not after all constitute an analogy of the right size. The experiential/non-experiential divide, assuming that it exists at all, is the most fundamental divide in nature (the only way it can fail to exist is for there to be nothing non-experiential in nature).³⁰

The claim, at least, is plain, and I'll repeat it. If it really is true that Y is emergent from X then it must be the case that Y is in some sense wholly dependent on X and X alone, so that all features of Y trace intelligibly back to X (where 'intelligible' is a metaphysical rather than an epistemic notion). *Emergence can't be brute*. It is built into the heart of the notion of emergence that emergence cannot be brute in the sense of there being absolutely no reason in the nature of things why the emerging thing is as it is (so that it is unintelligible even to God). For any feature Y of anything that is correctly considered to be emergent from X, there must be something about X and X alone in virtue of which Y emerges, and which is sufficient for Y.

I'm prepared to allow for argument that an ultimate's possession of its fundamental properties could be brute in the sense of there being no reason for it in the nature of things, so long as it is agreed that *emergence* cannot be brute. One problem is that brute emergence is by definition a miracle every time it occurs, for it is true by hypothesis that in brute emergence there is absolutely nothing about X, the emerged-from, in virtue of which Y, the emerger, emerges from it. And this means that it is also a contradiction in terms, given the standard assumption that the emergence of Y from X entails the 'supervenience' of Y on X,³¹ because it then turns out to be a strictly law-like miracle. But a miracle is by definition a violation of a law of nature!³² If someone says he chooses to use the word 'emergence' in such a way that the notion of brute emergence is not incoherent, I will know that he is a member of the Humpty Dumpty army and be very careful with him.

How did the notion of brute emergence ever gain currency? By one of the most lethal processes of theory formation, or term formation, that there is. The notion of brute emergence marks a position that seemingly has to exist if one accepts both RP (or, more simply, the reality of experience) and NE. And since many are irredeemably committed to both RP and NE, the notion of brute emergence comes to feel substantial to them by a kind of reflected, holographical energy. It has to be there, given these

²⁹ See n7. One current view of the 'Big Bang' is that it occurred everywhere in an already existing infinite space.

³⁰ The viscera are not unsophisticated organs. They can refuse the getting of A from non-A for some substitutions for A even while they have no difficulty with the strangest quantum strangenesses (see e.g. Essay 1: 38–9).

³¹ The supervenience thesis states that if Y is supervenient on X then whenever you have an X-type phenomenon you must also have a Y-type phenomenon.

³² This is Hume's definition of a miracle (I'm assuming that there is no *deus ex machina*). It is often said that this definition requires an absolute, non-statistical notion of a law of nature, but this is not so (see Mackie 1982: ch. 4).

unquestioned premisses, so it is felt to be real. The whole process is underwritten by the wild radical-empiricism-inspired metaphysical irresponsibilities of the twentieth century that still linger on (to put it mildly) today and have led many, via a gross misunderstanding of Hume, to think that there is nothing intrinsic to a cause in virtue of which it has the effect it does.³³

I'll say it again. For Y truly to *emerge* from X is for Y to arise from or out of X or be given in or with Y *given how X is*. Y must arise out of or be given in X in some essentially non-arbitrary and indeed wholly non-arbitrary way. X has to have something—indeed everything—to do with it. That's what emerging is (that's how liquidity arises out of non-liquid phenomena). It is essentially an in-virtue-of relation. It cannot be brute. Otherwise it will be intelligible to suppose that existence can emerge from (come out of, develop out of) non-existence, or even that concrete phenomena can emerge from wholly abstract phenomena. Brutality rules out nothing.³⁴ If emergence can be brute, then it is fully intelligible to suppose that non-physical soul-stuff can arise out of physical stuff—in which case we can't rule out the possibility of Cartesian egos *even if we are physicalists*. I'm not even sure we can rule out the possibility of a negative number emerging from the addition of certain positive numbers. We will certainly have to view with equanimity all violations of existing laws of (non-experiential) physics, dross turning adventitiously into gold, particles decaying into other particles whose joint charge differs from that of the original particle.

Returning to the case of experience, Occam cuts in again, with truly devastating effect. Given the undeniable reality of experience, he says, why on earth (our current location) commit oneself to NE? Why insist that physical stuff in itself, in its basic nature, is essentially non-experiential, thereby taking on

[a] a commitment to something—wholly and essentially non-experiential stuff—for which there is *absolutely no evidence whatever*

along with

[b] the wholly unnecessary (and incoherent) burden of brute emergence otherwise known as magic? That, in Eddington's terms, is silly.

³³ Here I make the common assumption that it is legitimate to segment the world into causes and effects. Hume's wholly correct, strictly epistemological claim—that so far as we consider things a priori 'any thing may produce any thing'—came to be read as the metaphysical claim that anything may produce anything. For a discussion of this error see e.g. Craig 1987: ch. 2 and Essay 18 below. It is worth noting that the epistemological restriction is usually explicitly stated in Hume's *Treatise*, in spite of his youthful liking for dramatic abbreviation: 'I have infer'd from these principles, that *to consider the matter a priori*, any thing may produce any thing, and that we shall never discover a reason, why any object may or may not be the cause of any other, however great, or however little the resemblance may be betwixt them' (T247); '*for ought we can determine by the mere ideas*, any thing may be the cause or effect of any thing' (T249–50; my emphasis). Brute emergence does indeed license the non-Humean, ontological version of 'any thing may produce any thing'.

³⁴ Even if a universe could just come into existence when nothing existed, it certainly couldn't emerge from non-existence in the relevant sense of 'emerge'. *Ex nihilo nihil fit*, whatever anyone says (Nobel Prize winners included).

—What about the emergence of life? A hundred years ago it seemed obvious to many so-called ‘vitalists’ that *life* could not emerge from utterly lifeless matter (from P phenomena), just as it seems obvious to you now that *experience* could not emerge from utterly non-experiential matter (from P phenomena). Today, however, no one seriously doubts that life emerged from matter that involved no life at all. The problem of life, that seemed insuperable, simply dissolved. Why should it not be the same with consciousness, a hundred years from now?

This very tired objection is always made in discussions of this sort, and the first thing to note is that one cannot draw a parallel between the perceived problem of life and the perceived problem of experience in this way, arguing that the second problem will dissolve just as the first did, unless one considers life completely apart from experience. So let us call life considered completely apart from experience ‘life*’. My reply is then brief. Life* reduces, experience doesn’t. Take away experience from life and it (life*) reduces smoothly to P phenomena. Our theory of the basic mechanisms of life reduces to physics via chemistry. Suppose we have a machine that can duplicate any object by a process of rapid atom-by-atom assembly, and we duplicate a child. We can explain its life* functions in exquisite detail in the terms of current sciences of physics, chemistry, and biology. We cannot explain its experience at all in these terms.

One of the odd things about the supposed problem of life* is that although it was popular at the end of the nineteenth century it would not have been thought very impressive in the seventeenth and eighteenth centuries. The problem of *experience* seemed as acute then as it does today, but many found little difficulty in the idea that animals including human beings were—except in so far as they had experience—simply physical machines.³⁵ It should be added that many were quite unmoved by the problem of life* even when it was at the height of its popularity, but found the problem of experience as acute as their seventeenth- and eighteenth-century predecessors and twentieth and twenty-first century successors.³⁶

4 ‘PROTO-EXPERIENTIAL’

Some may insist again that they find nothing intolerable in the idea that (spatial) S-phenomena can be emergent properties of something wholly non-S, and they may add that they feel the same about the experiential emerging from the wholly non-experiential.

What should one do? Encourage them, first, to see—to allow—that if S phenomena can be emergent properties of wholly non-S phenomena then the stuff emerged-from, the non-spatial whatever-it-is, must at the very least be somehow *intrinsically suited* to constituting spatial phenomena, on their view; it must be ‘proto-spatial’ in that sense.

³⁵ Many also took it that experience, too, was just a physical phenomenon, although we could not understand how. Joseph Priestley made the point that we know nothing about the physical that gives us reason to think that the experiential is not physical with its full force in 1777; Locke had already made it, somewhat circumspectly, in the 1690s, as had the ‘a-posteriori physicalist’ Regius, forty years earlier (1647: 294–5).

³⁶ See e.g. James 1890, and references there.

—Quite so. And exactly the same may be true of experiential phenomena. Experiential phenomena can indeed emerge from wholly and utterly non-experiential phenomena. This is possible because these non-experiential phenomena are intrinsically suited to constituting experiential phenomena in certain circumstances, and are ‘proto-experiential’ in that sense, although ultimately non-experiential in themselves.

This doesn’t escape the problem, it merely changes the terms. ‘Proto-experiential’ now means ‘intrinsically suited to constituting certain sorts of experiential phenomena in certain circumstances’, and clearly—necessarily—for X to be intrinsically suited to or for constituting Y in certain circumstances is for there to be something about X’s nature *in virtue of which* X is so suited.³⁷ If there is no such in-virtue-of-ness, no such intrinsic suitability, then any supposed emergence is left brute, in which case it is not emergence at all, it is magic, and everything is permitted, including, presumably, the emergence of the (ontological) concrete from the (ontological) abstract. If on the other hand there is such intrinsic suitability, as there must be if there is to be emergence, how can this be possessed by wholly, utterly, through-and-through non-experiential phenomena? (This is the unargued intuition again. Bear in mind that the intuition that the non-experiential could not emerge from the wholly experiential is exactly parallel and unargued.) If you take the word ‘proto-experiential’ to mean ‘not actually experiential, but just what is needed for experience’, then the gap is unbridged.³⁸ If you take it to mean ‘already intrinsically (occasionally) experiential, although very different, qualitatively, from the experience whose realizing ground we are supposing it be’, you have conceded the fundamental point.

—You’re waving your arms around. H₂O molecules are, precisely, ‘proto-liquid’, and are at the same time, in themselves, wholly and utterly non-liquid.

To offer the liquidity analogy is to see its inadequacy. Liquidity is a P phenomenon that reduces without remainder to other P phenomena. Analysed in terms of P properties, liquid bodies of water and H₂O molecules have exactly the same sorts of properties, and they are made of exactly the same stuff (ultimates). This is not the case when it comes to experiential phenomena and non-experiential phenomena, for it is built into our starting point, set by NE, that they do not have the same sorts of

³⁷ It’s not clear what the import of the phrase ‘in certain circumstances’ is, but the circumstances must presumably themselves be wholly non-spatial and non-experiential, and they cannot in any case make any contribution to the spatiality or the experientiality if it is to emerge wholly and only from the wholly non-spatial and non-experiential phenomena that are being taken to be distinct from the circumstances in which they find themselves.

³⁸ Compare Chalmers’s (1997) use of ‘protophenomenal’. Chalmers is a realist about experience but he gives central place to an idea that rules out real physicalism: the idea that there could be creatures that have no experiential properties although they are ‘perfect physical duplicates’ of experiencing human beings. These creatures, *Australian zombies*, have done a lot of damage in recent discussion, blotting out classical philosophical zombies, who are outwardly and behaviourally indistinguishable from human beings but with unknown and possibly non-biological insides. Chalmers holds that Australian zombies are a real possibility, but this is not something that can be shown, if only because there is a great deal we do not know about the physical, and it is fabulously implausible to suppose that an atom-for-atom, state-for-state duplicate of an experiencing human being could be produced and not have experience (note that one cannot produce an atom-for-atom, state-for-state duplicate of one of us while varying the laws of nature).

properties at all in this sense. The analogy is not of the right size or kind. What we need, to put it now in terms of P properties, is, precisely, an analogy that could give us some idea of how (natural, intrinsic, non-conventional) non-P properties could emerge from P properties—and of how things with only P properties could be proto-non-P phenomena.³⁹

It may be said that the analogy can still help indirectly, by pointing to a version of ‘neutral monism’. The central idea of neutral monism is that there is a fundamental, correct way of conceiving things—let us say that it involves conceiving of them in terms of ‘Z’ properties—given which all concrete phenomena, experiential and non-experiential, are on a par in all being equally Z phenomena. They are on a par in just the same way as the way in which, according to NE physicalism, all concrete phenomena are on a par in being P phenomena. The claim is then that if one duly conceives all concrete phenomena as Z phenomena, thereby acknowledging their fundamental uniformity, [i] the emergence of experiential phenomena from non-experiential phenomena is as unsurprising as [ii] the emergence of liquid phenomena from non-liquid phenomena is when one conceives things in terms of P phenomena. For both non-experiential P phenomena and experiential phenomena are Z phenomena, so really all we find is the emergence of Z phenomena from Z phenomena.

This proposal, however, merely confirms the current position. For what we do, when we give a satisfactory account of how liquidity emerges from non-liquidity, is show that there aren’t really any new properties involved at all. Carrying this over to the experiential case, we get the claim that what happens, when experientiality emerges from non-experientiality, is that there aren’t really any new properties involved at all. This, however, means that there were experiential properties all along; which is precisely the present claim. One cannot oppose it by appealing to ‘neutral monism’ in any version that holds that really only the Z properties are ultimately real, if this involves the view that experiential and non-experiential properties are at bottom only appearances or seemings. Such a view is incoherent, because experience—appearance, if you like—cannot itself be only appearance, that is, not really real, because there must be experience for there to be appearance (see note 7).

Some may reject ‘intrinsically suited to *constituting* Y’ as a gloss on ‘proto-X’. In place of ‘constituting’ they may want to substitute ‘giving rise to’ or ‘producing’, and this may for a moment seem to open up some great new leeway for the idea of radical emergence. The idea will be that X remains *in itself* wholly and utterly non-experiential, but *gives rise to* something wholly ontologically distinct from itself, i.e. Y. But real physicalists can’t make this substitution. For everything real and concrete is physical, on their view, and experiential phenomena are real and concrete, on their

³⁹ Objections to [a] standard physicalism and [b] the rejection of radical emergence sometimes advert to the fact that conventional phenomena—phenomena essentially involving conventions—may plausibly be said to arise from wholly and utterly non-conventional phenomena. There is, however, no difficulty in the idea that all concretely existing conventional phenomena are wholly physical phenomena, and the emergence of conventional phenomena from non-conventional phenomena is easily explicable in general terms by real physicalism, which acknowledges, of course, the existence of experiential phenomena.

view, and none of them will I think want to throw away the conservation principles and say that brand new physical stuff (mass/energy) is produced or given rise to when experiences are emergent from the non-experiential, i.e. all the time, as we and other animals live our lives. That is magic again, and I am assured that nothing like this happens with liquidity and Bénard convection cells.

Quite independently of these examples, and the laws of physics, the relevant metaphysical notion of emergence is I think *essentially* conservative in the sense of the conservation principles.

5 MICROPSYCHISM

I have been trying to see what can be done for those who want to combine NE and RP and (therefore) hold that the experiential may emerge from the wholly and utterly non-experiential. I looked for other examples of emergence, in case they could help us understand the possibility, at least, of such a thing, but examples like liquidity seemed wholly inadequate, not the right size. I then looked for cases of emergence that promised to be of the right size, but they seemed to describe impossibilities and so backfire, suggesting that there really could not be any such thing as radical non-experiential-to-experiential emergence.

That is what I believe: experiential phenomena cannot be emergent from wholly non-experiential phenomena. The intuition that drives people to dualism (and eliminativism, and all other crazy attempts at wholesale mental-to-non-mental reduction) is correct in holding that you can't get experiential phenomena from P phenomena, that is, shape-size-mass-charge-etc. phenomena, or, more carefully now—for we can no longer assume that P phenomena as defined really are wholly non-experiential phenomena—from *non-experiential* features of shape-size-mass-charge-etc. phenomena. So if experience like ours (or mouse experience, or sea snail experience) emerges from something that is not experience like ours (or mouse experience, or sea snail experience), then that something must already be experiential in some sense or other. It must already be somehow experiential in its essential and fundamental nature, however primitively or strangely or (to us) incomprehensibly; whether or not it is also non-experiential in its essential nature, as conventional physicalism supposes.

Assuming, then, that there is a plurality of physical ultimates, some of them at least must be intrinsically experiential, intrinsically experience-involving. Otherwise we're back at brutality, magic passage across the experiential/non-experiential divide, something that, *ex hypothesi*, not even God can understand, something for which there is no reason at all as a matter of ultimate metaphysical fact, something that is, therefore, objectively a matter of pure chance every time it occurs, although it is at the same time perfectly law-like.⁴⁰

⁴⁰ Note again that this is not a version of the merely epistemological point that all concrete connection (e.g. causal connection) is ultimately unintelligible to us (ultimately 'epistemologically brute' for us).

I conclude that real physicalists must give up NE.⁴¹ Real physicalists must accept that at least some ultimates are intrinsically experience-involving.⁴² They must at least embrace *micropsychism*. Given that everything concrete is physical, and that everything physical is constituted out of physical ultimates, and that experience is part of concrete reality, it seems the only reasonable position, more than just an ‘inference to the best explanation’. Which is not to say that it is easy to accept in the current intellectual climate.

Micropsychism is not yet panpsychism, for as things stand realistic physicalists can conjecture that only some types of ultimates are intrinsically experiential.⁴³ But they must allow that panpsychism may be true, and the big step has already been taken with micropsychism, the admission that at least some ultimates must be experiential. ‘And were the inmost essence of things laid open to us’⁴⁴ I think that the idea that some but not all physical ultimates are experiential might look like the idea that some but not all physical ultimates are spatiotemporal (on the assumption that space-time is indeed a fundamental feature of reality). I would bet a lot against there being such radical heterogeneity at the very bottom of things. In fact (to disagree with my earlier self) it is hard to see why this view would not count as a form of dualism.⁴⁵ So I’m going to assume, for the rest of this paper at least, that micropsychism is panpsychism.

So now I can say that physicalism, that is, real physicalism, entails panexperientialism or panpsychism. It entails panpsychism given the impossibility of ‘radical’ emergence. All physical stuff is energy, in one form or another, and all energy, I trow, is an experience-involving phenomenon. This sounded crazy to me for a long time, but I am quite used to it, now that I know that there is no alternative short of ‘substance dualism’, a view for which (as Arnauld saw) there has never been any good argument. Real physicalism, realistic physicalism, entails panpsychism, and whatever problems are raised by this fact are problems a real physicalist must face.

They seem very large, these problems (so long as we hold on to the view that there is indeed non-experiential reality). To begin with, ‘experience is impossible without an experiencer’, a subject of experience.⁴⁶ So we have, with Leibniz, and right at the start, a rather large number of subjects of experience on our hands—if, that is, there are as many ultimates as we ordinarily suppose. I believe that this is not, in fact, a serious problem, however many ultimates there are,⁴⁷ but we will also need to apply

⁴¹ Part of being realistic, evidently, is that one does not treat experience as objectively miraculous every time it occurs.

⁴² The most ingenious attempt to get round this that I know of is Broad’s—see Broad 1925: ch. 14 and McLaughlin 1992—but it does not, in the end, work.

⁴³ They may for example propose (after assuming that the notion of charge has application to ultimates) that only those with electric charge are intrinsically experiential.

⁴⁴ Echoing Philo, who speaks for Hume in his *Dialogues*: ‘And were the inmost essence of things laid open to us, we should then discover a scene, of which, at present, we can have no idea. Instead of admiring the order of natural beings, we should clearly see, that it was absolutely impossible for them, in the smallest article, ever to admit of any other disposition’ (1779: 174–5).

⁴⁵ 1994: 77.

⁴⁶ Frege 1918: 27. No sensible Buddhist rejects such a claim, properly understood.

⁴⁷ For reasons I lay out in Strawson 2003b.

our minds to the question whether the class of subjects of experience contains only ultimates, on the one hand, and things like ourselves and other whole animals, on the other hand, or whether there are other subjects in between, such as living cells. Panpsychism certainly does not require one to hold the view that things like stones and tables are subjects of experience—this receives no support from the current line of thought—but we will need to address James’s objection to the idea that many subjects of experience can somehow constitute a single ‘larger’ subject of experience.⁴⁸ In general, we will have to wonder how macroexperientiality arises from microexperientiality, where by microexperientiality I mean the experientiality of ultimates relative to which all evolved experientiality is macroexperientiality.⁴⁹

We also have to wonder how the solution to the ‘problem of mental causation’ is going to drop out of all this. We know, though, that different arrangements of a few types of fundamental ultimates give rise to entities (everything in the universe) whose *non*-experiential properties seem remarkably different from the non-experiential properties of those fundamental ultimates, and we have no good reason not to expect the same to hold true on the experiential side. It may be added that there is no more difficulty in the idea that the experiential quality of microexperientiality is unimaginable by us than there is in the idea that there may exist sensory modalities (qualitatively) unimaginable by us.

It is at this point, when we consider the difference between macroexperiential and microexperiential phenomena, that the notion of emergence begins to recover some respectability in its application to the case of experience. For it seems that we can now embrace the analogy with liquidity after all, whose pedagogic value previously seemed to lie precisely in its inadequacy. For we can take it that human or sea snail experientiality emerges from experientiality that is not of the human or sea snail type, just as the shape-size-mass-charge-etc. phenomenon of liquidity emerges from shape-size-mass-charge-etc. phenomena that do not involve liquidity. Human experience or sea snail

⁴⁸ James 1890: vol. 1, ch. 6. The following fine passage precedes his statement of the objection: ‘We need to try every possible mode of conceiving the dawn of consciousness so that it may not appear equivalent to the irruption into the universe of a new nature, non-existent until then. Merely to call the consciousness ‘nascent’ will not serve our turn. It is true that the word signifies not yet quite born, and so seems to form a sort of bridge between existence and nonentity. But that is a verbal quibble. The fact is that discontinuity comes in if a new nature comes in at all. The quantity of the latter is quite immaterial. The girl in ‘Midshipman Easy’ could not excuse the illegitimacy of her child by saying, ‘it was a very small one’. And Consciousness, however small, is an illegitimate birth in any philosophy that starts without it, and yet professes to explain all facts by continuous evolution. If evolution is to work smoothly, consciousness in some shape must have been present at the very origin of things. Accordingly we find that the more clear-sighted evolutionary philosophers are beginning to posit it there. Each atom of the nebula, they suppose, must have had an aboriginal atom of consciousness linked with it; and, just as the material atoms have formed bodies and brains by massing themselves together, so the mental atoms, by an analogous process of aggregation, have fused into those larger consciousnesses which we know in ourselves and suppose to exist in our fellow-animals’ (1890: 1.148–9).

⁴⁹ As Nick White reminded me, we certainly don’t have to suppose that microexperientiality is somehow weak or thin or blurry (this is perhaps how some people imagine the most primitive Leibnizian monads). It can be as vivid as an experience of bright red or an electric shock (both of which are ‘confused’ and ‘indistinct’ in Leibniz’s terms). Compare Rosenberg 2005: ch. 5.

experience (if any) is an emergent property of structures of ultimates whose individual experientiality no more resembles human or sea snail experientiality than an electron resembles a molecule, a neuron, a brain, or a human being. Once upon a time there was relatively unorganized matter, with both experiential and non-experiential fundamental features. It organized into increasingly complex forms, both experiential and non-experiential, by many processes including evolution by natural selection. And just as there was spectacular enlargement and fine-tuning of non-experiential forms (the bodies of living things), so too there was spectacular enlargement and fine-tuning of experiential forms.⁵⁰

This is not to advance our detailed understanding in any way. Nor is it to say that we can ever hope to achieve, in the experiential case, the sort of feeling of understanding that we achieve in the liquid case.⁵¹ The present proposal is made at a very high level of generality (which is not a virtue); it merely recommends a general framework of thought in which there need be no more sense of a radically unintelligible transition in the case of experientiality than there is in the case of liquidity. It has nothing to offer to scientific test.

One can I think do further work on this general framework, by working on one's general metaphysics. The object/process/property/state/event cluster of distinctions is unexceptionable in everyday life but it is hopelessly superficial from the point of view of science and metaphysics, and one needs to acquire a vivid sense that this is so. One needs a vivid sense of the respect in which (given the spatiotemporal framework) every object is a process; one needs to abandon the idea that there is any sharp or categorial distinction between an object and its propertiedness.⁵² One needs to grasp fully the point that 'property dualism', applied to intrinsic, non-relational properties, is strictly incoherent (or just a way of saying that there are two very different kinds of properties) in so far as it purports to be genuinely distinct from substance dualism, because there is nothing more to a thing's being than its intrinsic, non-relational propertiedness.

We are as inescapably committed to the discursive, subject-predicate form of experience as we are to the spatiotemporal form of experience, but the principal and unmistakable lesson of the endlessness of the debate about the relation between objects and their propertiedness is that discursive thought is not adequate to the nature of reality: we can see that it doesn't get things right although we can't help persisting with it. There is in the nature of the case a limited amount that we can do with such insights, for they are, precisely, insights into how our understanding falls short of reality, but their general lesson—that the nature of reality is in fundamental respects beyond discursive grasp—needs always to be borne in mind.

⁵⁰ The heart of experience, perhaps, is electromagnetism in some or all its forms; electromagnetism being just one expression of some single force whose being is intrinsically experiential, whatever else it is or is not. (I do not, unfortunately, foresee any kind of scientific research programme.)

⁵¹ Feelings of understanding are just that; they are essentially subjective things with no metaphysical consequences.

⁵² See e.g. Essay 6: following Nagarjuna, Nietzsche, James, Ramsey, and many others.

I have argued that there are limits on how different X and Y can be (can be intelligibly supposed to be) if it is true that Y emerges from X. You can get A from non-A for some substitutions for A but not all. The extended, I have proposed, can't emerge from the intrinsically wholly non-extended (except on pain of being a mere appearance and so not really real). The spatial can't emerge from the intrinsically wholly non-spatial (except on the same pain). The experiential can't emerge from the intrinsically wholly non-experiential, and it doesn't have the option of being a mere appearance. You can make chalk from cheese, or water from wine, because if you go down to the subatomic level they are both the same stuff, but you can't make experience from something wholly non-experiential. You might as well suppose—to say it once again—that the (ontologically) concrete can emerge from the (ontologically) abstract.⁵³ I admit I have nothing more to say if you question this 'can't', but I have some extremely powerful indirect support from Occam's razor and Eddington's notion of silliness.

I finish up, indeed, in the same position as Eddington. 'To put the conclusion crudely', he says, 'the stuff of the world is mind-stuff'—something whose nature is 'not altogether foreign to the feelings in our consciousness'. 'Having granted this', he continues,

the mental activity of the part of the world constituting ourselves *occasions no surprise*; it is known to us by direct self-knowledge, and we do not explain it away as something other than we know it to be—or, rather, it knows itself to be. It is the physical aspects [i.e. non-mental aspects] of the world that we have to explain.⁵⁴

Something along these general panpsychist—or at least micropsychist—lines seems to me to be the most parsimonious, plausible and indeed 'hard-nosed' position that any physicalist who is remotely realistic about the nature of reality can take up in the present state of our knowledge.⁵⁵

⁵³ Objection: the comparison is false because the experiential and the non-experiential are two categories within the concrete. Reply: the concrete and the abstract are two categories within the real.

⁵⁴ 1928: 276–7. 'Mind-stuff' is William James's term: 'The theory of "mind-stuff" is the theory that our mental states . . . are composite in structure, made up of smaller [mental] states conjoined. This hypothesis has outward advantages which make it almost irresistibly attractive to the intellect, and yet it is inwardly quite unintelligible' (1890: 1.145).

⁵⁵ I am grateful to participants in the 2002 University of London one-day conference on consciousness, and, since then, to audiences at the University of Reading, Copenhagen University, University of California at Irvine, Trinity College Dublin, and Columbia University, including in particular Nick White, Alva Noë, Bill Lyons and David Albert. I am especially grateful to members of the 2002 Konstanz Workshop on 'Real materialism' for their constructive scepticism. (This paper first appeared in the *Journal of Consciousness Studies* 13, 2006, with replies by Carruthers and Schecter, Coleman, Goff, Jackson, Lycan, Macpherson, McGinn, Papineau, Rey, Rosenthal, Seager, Simons, Skrbina, Smart, Stapp, Stoljar, and C. Wilson, and a reply to the replies.)

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