Ghosts and Sparse Properties
Why Physicalists Have More to Fear from Ghosts than Zombies

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(I) Introduction

Zombies are bodies without minds: creatures that are physically identical to actual human beings, but which have no conscious experience. Much of the consciousness literature concerns how threatening philosophical reflection on such creatures is to physicalism. There is not much attention given to the converse possibility, the possibility of minds without bodies, that is, creatures who are conscious but whose nature is exhausted by their being conscious. We can call such a 'purely conscious' creature a ghost.

In this paper, I will claim that philosophical reflection on zombies is not threatening to all forms of physicalism: specifically it causes no difficulties for the non-standard form of physicalism I like to call 'funny physicalism'.[1] I go on to claim that philosophical reflection on ghosts leads to powerful arguments against all forms of physicalism, including funny physicalism. In this sense, physicalists have more to fear from ghosts than from zombies.

(II) Three kinds of physicalism

The following principle, which I shall call the principle of conceptual dualism, is intuitive to many:

[1] 'Funny peculiar' not 'funny ha ha', to use my mother's terminology.

> **Principle of Conceptual Dualism (PCD):** Nothing physics can tell us about an organism entails anything about what it is like to be that organism (and vice versa), i.e. there is no way of moving a priori from knowing the kind of things physics has to tell us about an organism, to knowing what it is like to be that organism (or vice versa).

How do physicalists react to **PCD**? Some physicalists, we can call them *a priori physicalists*, deny **PCD**. An a priori physicalist claims that we can, at least in principle, move a priori from a complete physical description of an organism to knowing what it is like to be that organism [Ryle 1949; Armstrong 1968, Lewis 1966; 1988; 1994; Harman 1990; Dennett 1991; Dretske 1995; Rey 1995]. Other physicalists, we can call them *a posteriori physicalists*, accept **PCD** but deny its metaphysical significance. An a posteriori physicalist claims that to think about an organism in physical terms and to think about an organism in terms of what it is like to be it, are two conceptually distinct ways of thinking about the same things. Just as our concept of *water* and our concept of H_2O are distinct and yet co-referring, so our concept of *pain* and our concept of *c-fibres firing* are distinct and yet co-referring [Levine 1983; Loar 1990; Tye 1995; Lycan 1996; Hill 1997; Hill and McLaughlin 1998; Block and Stalnaker 1999; Papineau 1993; 2002; Perry 2001].

There is a third option for the physicalist. Some physicalists accept that **PCD** is true *and* that it has metaphysical significance: the kind of things physics has to tell us about an organism do not ground the conscious states of that organism, and yet nevertheless claim – as of course a physicalist must claim – that consciousness is a wholly physical phenomenon. Such a view is possible only for the physicalist who accepts *that there is more to the physical than what physics tell us about it*. If there is a 'hidden' nature to physical entities, indiscernible from the perspective of physics, then our conscious states may supervene on this hidden physical nature. The resulting view is very different from 'physicalism' as it is normally understood, which is why I shall call it 'funny physicalism'.

(III) Funny physicalism in closer focus

A number of philosophers have argued that physics wholly characterises physical entities in terms of their dispositions or causal role [Blackburn 1992; Lewis 1970; Armstrong 1961; 1968]. At the same time, there is a strong metaphysical intuition that dispositional properties cannot exhaust the nature of matter, that there must be some categorical nature to matter which grounds its dispositions. This claim and this intuition are not inconsistent. But if both are right, then it follows there must be some extra, categorical nature to matter, which is hidden from the perspective of physics. Funny physicalism takes advantage of this fact in order to make sense of the supervenience of conscious states on physical states. This view supposes that the 'hidden' categorical nature of matter consists of the phenomenal or protophenomenal properties of fundamental physical entities. The conscious experience of human beings and other organisms supervenes on this more fundamental phenomenal/protophenomenal nature. [Russell 1927; Eddington 1928; Feigl 1958; 1967; Maxwell 1979; Lockwood, M. 1989; Strawson 1994; 2003; 2006; Chalmers 1996; Griffen 1998; Stoljar 2001].

There is a case to be made for this position not being correctly labeled 'physicalism' or 'materialism', at least as we ordinarily understand these terms.[2] Indeed, David Chalmers, the arch 'property dualist', is highly sympathetic to the view, which he says 'fits the letter of materialism' but 'shares the spirit of anti-materialism' [2002a: 265]. Other physicalist strategies assume that physical entities are fitted to realise the conscious states of an organism in virtue of the ways in which they are characterised by physics: organisms' conscious states supervene on the empirically discernible dispositional or functional properties of material objects and their parts. Funny physicalism in contrast explains consciousness in terms of the unobservable phenomenal/protophenomenal nature of fundamental physical entities which, as it were, hides underneath their empirically discernible features.

[2] I use the words 'physicalism' and 'materialism' interchangeably.

On the other hand, if, as this view suggests and as seems plausible, our physical concepts are natural kind concepts, then any hidden essential features of the entities we refer to with such concepts, perhaps including phenomenal or protophenomenal properties, will turn out to be correctly described as constituting the nature of physical stuff, in the same way that the underlying chemical composition of the stuff we denote with the concept *water* turns out to be correctly described as constituting the nature of water. I shall take funny physicalism to be a form of physicalism, but of a non-standard kind.

We might distinguish, then, between two kinds of physical property. There are the dispositional properties of physical objects and their parts which physics tells us about. Let us call such properties, following Galen Strawson, the 'physicSal properties' [2006], and standard physicalists who try to ground consciousness in them 'physicSalists'. There are also the categorical properties of physical objects and their parts, which do not show up in physics. Let us call such properties the *deep physical properties*.[3] The funny physicalist, because of her commitment to both the truth and the metaphysical significance of **PCD**, holds that the conscious states of organisms do not supervene on their physicSal properties. Nevertheless, she retains her claim to being a physicalist (of sorts) by holding that an organism's conscious experience supervenes on its *deep physical states*.

(IV) Why funny physicalists needn't fear zombies

It seems clear that physicSalist physicalists have much to fear from zombies. If it is coherent to suppose that a creature might be, from the perspective of physics, indiscernible from an actual human being and yet have no conscious experience, then the kind of things physics tells us about a given organism do not entail anything about what it is like to be that organism. If zombies are coherent, a priori materialism is false. A posteriori physicalists, in contrast, need not fear the *coherence* of zombies. They are comfortable with physical states and conscious states being *conceptually* distinct. But if zombies are *possible*, if there are possible worlds where there are creatures which are,

[3] See Stoljar 2001for a similar distinction between two different senses of 'physical property'.

from the perspective of physics, indiscernible from actual human beings and yet lack conscious experience, then it follows that the properties of organisms that physics tells us about cannot be identical with, or subvene, the consciousness experience of organisms. If zombies are possible, a posteriori physicalism is false.

Is the conceivability/possibility of zombies inconsistent with funny physicalism? It depends on what conception of zombies we have in mind. My zombie twin, by definition, is physically identical to me. But by saying that my zombie twin is 'physically identical' to me, we might mean that it is physically identical to me in terms of its *physicSal properties*, or we might mean that it is physically identical to me in terms of its *deep physical properties*. We can call the first kind of zombie a *physicSal zombie*, and the second kind of zombie a *deep zombie*.

Funny physicalism is consistent with both the coherence and the possibility of physicSal zombies. If physicSal zombies are coherent, then physicSal states are conceptually distinct from conscious states. If physicSal zombies are possible, then physicSal states are metaphysically distinct from conscious states. But the funny physicalist denies neither of these things. On the other hand, funny physicalism is inconsistent with the possibility of deep zombies. If there could be non-conscious creatures that have all the same deep physical properties as actual human beings, then our conscious states do not supervene on our deep physical nature.

Having said that, it is not clear that the funny physicalist need be too concerned about the fact that her view is inconsistent with the possibility of deep zombies because, in the absence of some independent argument for dualism, we have no good reason for thinking that such creatures *are* possible. The reason that claims to the possibility or coherence of physicSal zombies are as plausible as they are is that we have a pretty good grasp of physicSal properties, those properties which physicSal zombies are defined as having in the absence of conscious experience. But we have no grasp of deep physical properties, at least not empirically. Given that we have no empirical

understanding of deep physical properties, we have no way of knowing whether or not they might be exemplified in the absence of conscious states.

We can conclude, then, that the funny physicalist has nothing to fear from philosophical reflection on zombies. It is not implausible to think that philosophical reflection on zombies can show physicSal zombies to be possible. But the possibility of physicSal zombies is not inconsistent with funny physicalism. The possibility of deep zombies *is* inconsistent with funny physicalism, but philosophical reflection on zombies, in the absence of some other argument for dualism, gives us no reason to think that deep zombies are possible.

(V) Ghosts in closer focus

Funny physicalists have little to fear from philosophical reflection on zombies: bodies without minds. But what of philosophical reflection on the converse possibility: minds without bodies? We can understand a ghost to be *a pure subject of experience*: a creature whose being is exhausted by its being conscious, by there being something that it is like to be it.[4] Consider the following definitions:

> **Consciousness:** *Consciousness* is the property of being something such that there is something that it is like to be it.
> **Mode of consciousness:** A *mode of consciousness* is the property of being something such that it is like *this* to be it, where '*this*' picks out the complete determinate way it is to be a subject of experience.

Consciousness is a determinable property, of which *modes of consciousness* are the determinates.

Using this jargon, we can give the following more precise definition of a 'ghost':

[4] Note that I have not defined ghosts to be non-physical subjects of experience.

A ghost is a creature that:

1. Is conscious: i.e. there is something that it is like to be it.
2. Is such that its mode of consciousness does not supervene on some more fundamental property or properties.
3. Has no fundamental property other than its mode of consciousness.

My ghost twin is a creature that has qualitatively identical conscious experience to me – what it is like to be my ghost twin is exactly the same as what it is like to be me – but whose nature is exhausted by its conscious experience.

(VI) Why the funny physicalist ought to believe in ghosts

In a series of experiments in conference bars, I have found that the initial result of confronting Bob the Philosopher with the notion of a ghost is the formation of a conviction in Bob that such a creature is beyond what he is able to conceive of. In many cases I suspect that this conviction is caused by Bob's attempt to *visually imagine* ghosts, out there in space as it were. If you start trying to conceive of ghosts in this way, all you're going to get is the traditional floating sheet.

The way into imagining your ghost twin is to go through the familiar Cartesian process of doubting everything that it is possible to doubt. For all you know for sure, the physical world around you might be a delusion, placed in you by an incredibly powerful evil demon. The arms and legs you seem to see in front of you, the heart you seem to feel beating beneath your breast, your body that feels solid and warm to the touch, all may be figments of a particularly powerful delusion. You might not even have a brain.

The only state of affairs you know for certain to obtain is that you exist as *a thing such that there is something that it is like to be that thing*. You know for certain that you are a

thing that has an experience *as of* having arms and legs, a beating heart, a warm, solid body. You know that you are a subject of experience. But you may not be a creature that exists in space, or has physical parts. It is by engaging in the process of Cartesian doubting that one arrives at a conception of one's ghost twin.

I am not suggesting that the process of Cartesian doubting demonstrates the *possibility* of ghosts, but I am suggesting that it goes a good way to demonstrating their conceivability. To entertain the possibility that I am the only thing that exists, and that I exist as a thing with no properties other than my conscious experience, just is to conceive of my ghost twin. Any philosopher who agrees with Descartes up to and including the Cogito has a strong prima facie obligation to accept the conceivability of ghosts.

The most straightforward way of arguing that ghosts are incoherent, a way that would be open to the a priori physicalist, is by arguing for some kind of subtle conceptual connection between functional states (or behavioural) and conscious states. It is natural to take functional states to be *essentially higher-order*, in the sense that it is metaphysically necessary that they be realised in more fundamental causal goings on; software can't exist in the absence of hardware for it to run on. If conscious states are functional states, as a matter of conceptual necessity, then ghosts, creatures which by definition have conscious states that are not realised in any more fundamental nature, are incoherent.[5]

Of course this option is not open to the funny physicalist, given that she is committed to **PCD**. The functional and behavioural properties of organisms are entailed by the kind of things physics has to tell us about them. If our conscious states were in turn entailed by our functional or behavioural properties, then – assuming that the relation of *being entailed by* is transitive – it would be the case that our conscious states were entailed by the kind of things physics says about us, which is contrary to **PCD**. It is not open to the funny physicalist to argue for the incoherence of ghosts in the way an a priori physicalist would.

[5] Although one man's modus ponens is another man's modus tollens; see section IX.

Perhaps the funny physicalist can come up with some other way of making a case for some sort of subtle conceptual incoherence in the notion of a ghost. But given the prima facie coherence of ghosts, and given that the standard way of undermining their coherence is not open to the funny physicalist, it is clear that there is strong pressure for the funny physicalist to accept that ghosts are coherent.

Is it open to the funny physicalist to accept that ghosts are conceptually coherent, but to argue that they are ruled out on a posteriori grounds? The trouble with this strategy is that it is inconsistent with a principle which I think any funny physicalist must, either implicitly or explicitly, accept:

> **Cartesian Principle (CP):** In so far as a conception is of phenomenal properties qua phenomenal properties – that is, in terms of what it is like to have them – there can be no gap between conceivability and possibility.

CP is – or at least ought to be – either an explicit premise or an implicit background assumption in any argument for the distinctness of physicSal states and conscious states. Let us say that we have decided, through reflection on zombies or inverted spectra or Jackson's Mary, that **PCD** is true: that there is no a priori connection between physicSal states and conscious states. We do not yet have a reason to believe in the *metaphysical*, as opposed to merely conceptual, distinctness of physicSal states and conscious states. If conscious states *turn out*, as a matter of empirical fact, to be physicSal states, then **PCD**, although true, has no metaphysical significance. But if we are convinced not only that physicSal states and conscious states are conceptually distinct, but that our conception of conscious states is such that, when conceiving of our conscious states (qua conscious states) there can be no gap between conceivability and possibility, then we begin to have reason to believe in the metaphysical, as well as the conceptual, distinctness of physicSal states and conscious states.[6]

[6] In order to have a full argument against an identity between conscious states and physicSal properties, we

We can see this in the arguments anti-physicSalists give for the metaphysical distinctness of conscious states and physicSal states. George Bealer holds that propositions exclusively concerning our conscious experience are 'semantically stable', where (roughly) a proposition is semantically stable if it is invariant across all communities whose epistemic situations are qualitatively identical. It is in virtue of the semantic stability of such propositions, according to Bealer, that there can be no gap between the conceivability of their truth and the possibility of their truth [1987; 1992; 1994; 1996; 1999; 2002]. Chalmers holds that phenomenal concepts do not have distinct primary and secondary intensions, which he takes to be the reason that pain cannot turn out to be c-fibre firing in the way water can turn out to be H_2O [1996; 2002; 2009]. Martine Nida-Rümelin [2007] and myself [Goff: Forthcoming] have argued independently that the fact that we have a transparent conception of phenomenal properties entails the falsity of any a posteriori identity between phyicSal and phenomenal states. In all these cases, a central part of the arguments for the non-identity of physicSal states and conscious states involves the claim that our conception of conscious experience is such that, when conceiving of our conscious states, there could be no gap between conceivability and possibility.[7]

We can see then that both **PCD** and **CP** are needed to argue for the thesis that physicSal states and conscious states are distinct. Without **PCD**, we cannot rule out the possibility of a priori physicalism. Without **CP**, we cannot rule out the possibility of a posteriori physicalism. The kind of philosophical arguments which lead to funny physicalism are built on the foundations of both **PCD** and **CP**. The funny physicalist is implicitly committed to the truth of both **PCD** and **CP**.

If **CP** is true, if there cannot be a gap between conceivability and possibility regarding a conception of phenomenal properties (qua phenomenal properties), then it is difficult to

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are going to need a similar principle concerning physicSal properties: in so far as a conception is of physicSal properties qua physicSal properties there can be no gap between conceivability and possibility.

[7] Even if it is not explicitly claimed in the arguments that there is such a link between conceivability and possibility, in each case it is a reasonably straightforward implication of what is claimed.

see how a gap between conceivability and possibility could open up when one goes from conceiving only of phenomenal properties to conceiving of a thing which exemplifies only phenomenal properties. To apply this to the case in question, it is difficult to see how a gap between conceivability and possibility could open up when one moves from conceiving of phenomenal properties to conceiving of a ghost, i.e. a creature which has only phenomenal properties.[8] If the funny physicalist is committed to **CP**, then it looks like it is not open to her to claim that ghosts are coherent and yet impossible.

This is not a knock down argument, but there is strong pressure for the funny physicalist to accept that ghosts are metaphysically possible, on pain of her position collapsing into one of the two forms of physicalism she opposes. If she claims that ghosts are incoherent, then her position is in danger of collapsing into a priori physicalism. If she claims that ghosts are coherent but impossible, then her position is in danger of collapsing into a posteriori physicalism. Perhaps there is some way for the funny physicalist to show the impossibility of ghosts without falling on either horn of this dilemma, but the onus is firmly on the funny physicalist to show how this can be done.

(VII) It is not obvious why funny physicalists should be scared of ghosts

The funny physicalist has good reason to believe in the possibility of ghosts. But should this possibility worry her? Descartes argued that it was possible for his mind to exist independently from his body, and that for this reason his mind could not be identical to his body. It might be thought that the possibility of my ghost twin amounted to the possibility of my mind existing without my body, and so showed that my mind and body were distinct.

[8] I think a gap between conceivability and possibility opens up when one introduces indexical reference into one's conception. This is why we cannot infer from the conceivability to the possibility of my ghost counterpart (see below). But there is no need for indexical reference when conceiving of one's ghost twin (unless one thinks that phenomenal concepts are indexical concepts, but no funny physicalist would think this: if phenomenal concepts are indexical, then they could turn out, a posteriori, to denote physicSal properties).

However, the matter is not so simple. It is at least not obvious that my ghost twin existing is the same state of affairs as my mind existing without my body. My ghost twin is defined as a creature that is *qualitatively identical* to me, in terms of its conscious experience; it is not defined as a creature that is *numerically identical* to me. Let us distinguish between *my ghost twin*, which we can define as a possible creature whose nature is exhausted by its having qualitatively identical conscious experience to myself, from *my ghost counterpart*, which we can define as *me* existing – in some world – as a creature whose nature is exhausted by its having conscious experience qualitatively identical to my actual conscious experience. I have so far argued that a funny physicalist has strong reason to be committed to the possibility of her ghost twin, but I have at no point suggested that a funny physicalist has any reason to believe in the possibility of her ghost counterpart.

Moreover, contra Descartes, it is difficult to see what could justify a belief in the possibility of my ghost counterpart. Let us suppose that I, the subject of my experience, have both experiential and non-experiential being. If this is the case, then, in conceiving of myself *as* the subject of my experience, I am conceiving of myself in terms of only *part* of my nature: the experiential part. Perhaps this aspect of my nature can, in some possible creatures, i.e. my ghost twin, exist in the absence of any other properties. But it does not follow that it is possible for *the particular thing that is the subject of my experience* to exist in the absence of any non-experiential properties. If I, as opposed to my ghost twin, have non-experiential, as well as experiential, aspects to my essence, then it will simply not be possible for me to exist as a wholly experiential being. It is not initially obvious how the possibility of ghosts threatens physicalism.

We must also remember that funny physicalism starts from the thought that physics does not reveal to us the categorical nature of physical reality. We know about categorical physical properties only through the dispositions they ground. This opens up an interesting epistemic possibility. Perhaps if I were to conceive of my brain in terms of its categorical nature, I would find myself conceiving of a thing that is qualitatively indiscernible – at least in certain respects – from my ghost twin. Perhaps the very

phenomenal properties I conceive my ghost twin to have are themselves physical properties, just not conceived of under physical modes of presentation. This would imply, strange as it seems, that my ghost twin is itself a physical thing. If ghosts are a threat to funny physicalism, then this threat is not as straightforward as the threat zombies pose to standard forms of physicalism.

(VIII) Why the funny physicalist should be scared of ghosts

Moving from the metaphysical possibility of ghosts to the falsity of funny physicalism requires accepting David Lewis's distinction between 'sparse' and 'abundant' properties. Lewis characterises sparse properties as follows:

> Sharing of them makes for qualitative similarity, they carve nature at the joints, they are intrinsic, they are highly specific, the sets of their instances are *ipso facto* not entirely miscellaneous, there are only just enough of them to characterise things completely and without redundancy [Lewis 1986: 60].

We can discern from this that Lewis signs up to the following two principles in the characterisation of sparse properties:

Principle of Genuine Resemblance: Objects genuinely resemble to the extent, and only to the extent, that they share sparse properties.
Principle of Fundamentality: The sparse properties in a world are the fundamental properties in that world, i.e. the properties in the supervenience base at that world.

The reason the funny physicalist should be afraid of ghosts is that their possibility, together with the two principles above, implies that my mode of consciousness is a fundamental property. By the definition of 'ghost', my ghost twin's mode of consciousness is a fundamental property of its world. It follows straightforwardly, given

the *principle of fundamentality*, that my ghost twin's mode of consciousness is a sparse property of its world.

The funny physicalist might try to deny that the fact that my ghost twin's mode of consciousness is a sparse property of its world entails that *my* mode of consciousness is a sparse property of the actual world, in something like the following way: 'True, my ghost twin and I satisfy the common predicate "having such and such conscious experience", but my ghost twin satisfies that predicate in virtue of a corresponding universal, whilst I satisfy that predicate in virtue of phenomenal/protophenomenal universals instantiated by the fundamental physical entities which constitute my brain'.[9]

I think this response is not ultimately sustainable. Imagine a world containing two of my ghost twins, Bill and Ben. Bill and Ben resemble in virtue of sharing a sparse property. It follows, by the *principle of genuine resemblance*, that Bill and Ben genuinely resemble each other. But I resemble Bill in exactly the same way Bill resembles Ben: our pains, pleasures, visual and auditory experiences are qualitatively indiscernible. If Bill and Ben genuinely resemble each other, then Bill and I genuinely resemble each other. It follows, again from the *principle of genuine resemblance*, that Bill and I share a sparse property. That sparse property can only be my mode of consciousness.

If my mode of consciousness is a sparse property, it follows, given the *principle of fundamentality*, that my mode of consciousness is a fundamental property. This is inconsistent with funny physicalism, which claims that an organism's consciousness supervenes on the phenomenal or protophenomenal nature of fundamental physical entities.

Of course it is always open to the funny physicalist to deny the Lewisian distinction between sparse and abundant properties. But the need to do this is a cost of the theory. Lewis argued at considerable length that it is 'out of the question' [Lewis 1986: 61] in systematic philosophy to do without such a distinction. Without relying on this

[9] I am grateful to David Chalmers for this objection.

distinction, Lewis claims, it is extraordinarily difficult to give adequate accounts of a wide range of phenomena philosophers want to explain: intrinsic properties, laws, causation, thought content, supervenience, and the definition of materialism [Lewis 1983]. Even if Lewis's claims as to the indispensability of this distinction are exaggerated – I don't have space here to assess the details of his arguments – the thesis that some properties are more natural than others is extremely plausible independently of its philosophical usefulness. It would be a cost in terms of the plausibility of funny physicalism if it entailed that the property of *negative charge* is metaphysically on a par with the property of *being an electron or an elephant*.

Could the funny physicalist accept the distinction between natural and non-natural properties, but deny the *principle of fundamentality*, i.e. deny Lewis's claim regarding natural properties that 'there are only just enough of them to characterise things completely and without redundancy'? If this is an option, then the funny physicalist could claim that my mode of consciousness is a natural property, just not one in the supervenience base of the actual world.

It's not at all clear that a metaphysical view according to which there are natural properties above the fundamental physical level should count as a form of physicalism. Putting this concern on one side, the *principle of fundamentality* is a plausible philosophical principle in its own right; its denial is also a theoretical cost. This is especially true if one is *ontologically serious* about the natural properties, in the sense of taking the possession of a natural property to be a matter of instantiating a universal, or having a member of a set of exactly resembling tropes. It is commonplace in metaphysics to distinguish between the properties we are ontologically serious about and those we aren't, in something like the following way:

Real properties: A real property is a universal or a set of exactly resembling tropes.
Qualitative truth: A qualitative truth is a truth about how an object is, expressed by a predicate *p*, such that *p* does not correspond to a universal or a set of exactly resembling tropes.

For those who make this distinction, it would be extremely strange not to identify the Real properties with the natural properties, and thereby make genuine resemblance a matter of two objects sharing a universal or having exactly resembling tropes. Once this identification is made, it is a very good idea indeed to go on to identify the Real/natural properties with the fundamental properties. Here are three reasons why:

Sufficient truth-makers

The fundamental facts in a world, by definition, fix all the facts in that world. Any proposition which is true at world *w* is also true at any world which has all and only the same fundamental facts as *w*. It follows that for any world *w*, the fundamental properties, together with the objects that instantiate them, are sufficient to guarantee the truth of all contingently true propositions in *w*. For any predication *p* that is true in *w*, the fundamental facts in *w* provide sufficient truthmakers for the truth of *p*; there is no need to suppose the existence of any non-fundamental Real properties to serve as truthmakers for *p*.

Higher-level causation

If every event has a sufficient cause at the fundamental level, or is at least entailed by facts at the fundamental level, it is a puzzle how *non-fundamental* properties ever get to cause anything. The difficulties involved in making sense of the causal efficacy of non-fundamental properties are complex, and I will not have space here to explore all the issues. But it seems fair to say that the problem looks a lot less troubling if we suppose that higher-level properties are not Real properties, ontologically additional to the Real properties at the fundamental level, but are merely qualitative truths about objects, the truthmakers for which reside at the fundamental level.

In a situation where two Real properties, two distinct constituents of reality, are both candidates for causing the same event, over-determination looms. But where the two

'competing' causes are a Real property, and a qualitative truth made true by the Real property, then the 'over-determination', if any, looks harmless. What we seem to have is not so much two causal happenings, but two descriptions of the one causal reality.

Necessary connections between distinct existences

Non-fundamental properties in a world, by definition, supervene on the fundamental properties in that world. Any two worlds identical in terms of their fundamental properties are identical simpliciter. Consider a world with fundamental facts *f* and some non-fundamental property *p*. Any world where *f* obtains is a world where *p* exists. The existence of *f* necessitates the existence of *p*. If *p* is a Real property, then we have a necessary connection between distinct existences. If *p* is not a Real property but a qualitative truth made true by *f*, then the necessary connection is only that between truth and truthmaker. I take it that the latter kind of necessary connection is a lot less metaphysically troubling than the former.

We can conclude that:

1. The funny physicalist has very strong reason to believe that my ghost twin is metaphysically possible.
2. We can infer from the metaphysical possibility of my ghost twin, together with the *principle of naturalness* and the *principle of fundamentality*, that my mode of consciousness is a fundamental property, which is inconsistent with funny physicalism.

I don't take any of this to constitute an out and out refutation of funny physicalism. However, I do take it to constitute a serious challenge to the view, a challenge which requires some kind of response, a response which will inevitably have some kind of a cost. The options for the funny physicalist are as follows:

Response 1: Present an argument for the impossibility of ghosts which does not rely on denying **PCD** or **CP**.

Response 2: Deny the distinction between sparse and abundant properties as Lewis characterises it.

The difficulty with *Response 1* is that it's difficult to see how it can be done in a way that is consistent with the motivations for funny physicalism. The difficulty with *Response 2* is that it's difficult to do it without denying a lot of highly plausible metaphysical assumptions. Philosophical reflection on ghosts, in contrast to philosophical reflection on zombies, presents the funny physicalist with some significant difficulties.

(IX) Should physicSalists be scared of ghosts?

Funny physicalists should be particularly haunted by stories of ghosts; the possibility of ghosts seems to follow from the very motivations for their view, and the possibility of ghosts together with some very plausible metaphysical assumptions entails the falsity of their view. But physicSalists shouldn't be sleeping easy either; ghostly arguments also have considerable force against standard forms of physicalism:

The ghostly argument against a priori physicalism

Premise 1: Ghosts are conceivable (when we reach the end of the Cartesian doubting process we find ourselves conceiving of a ghost).
Premise 2: A priori physicalism entails that it is a conceptual truth that conscious states are essentially higher-order states (it is a conceptual truth that functional states must be realised by more fundamental causal goings on).
Premise 3: If ghosts are conceivable, then it is not a conceptual truth that conscious states are essentially higher-order states.
Conclusion: A priori physicalism is false.

In section V I suggested that the a priori physicalist could argue against the conceivability of ghosts by arguing that there is some kind of conceptual connection

between conscious states are functional/behavioural states. I think the onus is very much on the a priori physicalist not only to demonstrate that there is such a conceptual connection, but also to show how this conceptual conception gets in the way of my doubting the existence of everything except myself and my conscious experience. I have no idea how this could be done. If it can't be done, then ghosts are conceivable. If ghosts are conceivable, then a priori physicalism is false.

There are a couple of ways in which this ghostly argument is more effective than the zombie argument against a priori physicalism. If someone claims that they can't conceive of a zombie, it is difficult to persuade them that they can. But if someone tells me that they can't conceive of a ghost, I have an argument to make them think again: 'Can't you do the process of Cartesian doubting? Don't you end up doubting the existence of everything except yourself and your conscious experience? When you reach this stage, aren't you conceiving of a ghost?' Of course I have not conclusively shown that Descartes' conclusions up to and including the cogito are not confused in some way; my point is just that there is an extra layer of dialectical force not present in the zombie case.

Furthermore, one might doubt the conceivability of zombies on the grounds that no one who lacked a complete understanding of the complex workings of the human brain could be said to be able to conceive of a zombie. It is for this kind of reason that philosophers and philosophically inclined scientists are often agnostic on the zombie argument, reserving judgement until we have completed neuroscience. There is no such worry about the conceivability of ghosts.

First ghostly argument against a posteriori physicalism

Premise 1: Ghosts are conceivable (the a posteriori physicalist should agree with this premise).
Premise 2: If ghosts are conceivable then ghosts are possible.
Conclusion 1: Ghosts are possible.

Premise 3: If ghosts are possible, then my mode of consciousness is a fundamental property.

Premise 4: If my mode of consciousness is a fundamental property, then a posteriori physicalism is false (I define 'physicalism' such that any form of physicalism holds that my conscious states supervene on the nature of fundamental physical entities).

Conclusion 2: A posteriori physicalism is false.

Second ghostly argument against a posteriori physicalism

Premise 1: Ghosts are conceivable (the a posteriori physicalist should agree with this premise).

Premise 2: If ghosts are conceivable then ghosts are possible.

Conclusion 1: Ghosts are possible.

Premise 3: If ghosts are possible, then my mode of consciousness is not an essentially higher-order state.

Premise 4: If my mode of consciousness is not an essentially higher-order state, then a posteriori physicalism is false (a posteriori physicalists wish to identify actual modes of consciousness with functional or neurophysiological states; such states look to be essentially higher-order, e.g. a state which is defined in terms of billions of neurons must be realised by neurons, each of which is more fundamental than the neurophysiological state they constitute).

Conclusion 2: A posteriori physicalism is false.

I think that both these ghostly arguments are ever so slightly dialectically weaker than the zombie argument against a posteriori physicalism. Both the ghostly arguments and the zombie argument rely on making a link between conceivability and possibility. Bealer would defend premise 2 on the grounds that phenomenal concepts are semantically stable. Chalmers would defend premise 2 on the grounds that phenomenal concepts have identical primary and secondary intentions. Nida-Rümelin and myself would defend premise 2 on the grounds that we have a transparent conception of

phenomenal properties. To this extent, framing the debate in terms of ghosts would make it indiscernible from the more traditional zombie debate.

However, the possibility of zombies is more straightforwardly inconsistent with a posteriori physicalism than the possibility of ghosts. In the case of the first ghostly argument, the inconsistency relies on embracing the Lewisian distinction between sparse and abundant properties. In the case of the second ghostly argument, the inconsistency relies on showing that the kind of functional or neurophysiological states the posteriori physicalist wants to identify with modes of consciousness are essentially higher-order states. To this extent a posteriori physicalists should quake in their boots slightly (but only slightly) more at the approach of a zombie than at the sight of a ghost.

(X) Conclusion

In conclusion:

A priori physicalists: Scared of zombies, petrified of ghosts.
A posteriori physicalists: Equally scared of zombies and ghosts (more or less).
Funny physicalists: Chummy with zombies, petrified of ghosts.[10]

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[10] I wrote this paper whilst I was a Visiting Fellow at the Centre for Consciousness at the Research School of Social Sciences at the Australian National University. I am very grateful to David Chalmers and Jonathan Schaffer for helpful comments, and to Galen Strawson for giving me the confidence to pursue a whacky view just because it happens to be true.

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