

Hidden Nature Physicalism

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Abstract Hidden nature physicalists hold that an experiential quality and its hidden nature are the same property – even though they agree that our experiences are of experiential qualities but are not, in the same sense, experiences of their hidden natures. This paper argues that physicalists must be committed to ultimately giving accounts that involve no non-extensional relations, and that this commitment leads to an inability to explain how our experiences could be of experiential qualities, but not of their hidden natures.

Some physicalists write of “essential” or “hidden” natures of experiential qualities such as pain or red.¹ Many others do not write of the “natures” of qualities, but hold a constellation of views that warrants being called by the phrase that forms this paper’s title. The first section of this paper provides a statement of this constellation. The remainder of the paper goes on to argue that hidden nature physicalism (HNP) is an unsatisfactory view, because, to put the matter briefly, it cannot explain how the hidden natures could be hidden. In explaining and defending this critical point, we shall be led to consider several questions concerning concepts, the distinction between causation and explanation, and the notion of acquaintance.²

¹Thus, Hill (2009, p. 118): “[I]f the Cartesian argument is to succeed, . . . the essential nature of pain must be fully accessible to us when we experience pain. But it is precisely this thesis about the essential nature of pain that is called into question There is no guarantee that experiential representations of pain will do full justice to its essential properties.” Tye (2009, p. 142) describes a view he rejects as holding that “experience itself reveals red or canary yellow as simple, as not having a hidden nature”. P. S. Churchland (1998, p. 117) expresses hidden nature physicalism this way. “What is troublesome is the idea that all the reality there is to a sensation is available through sheerly having it. . . . I suggest, instead, a rather simple alternative: A sensation of pain is real, but not *everything* about the nature of pain is revealed in introspection – its neural substrate, for example, is not so revealed. (Emphasis in original. It is clear from her context that by “neural substrate”, Churchland does *not* mean “neural cause”).

²Others have reached conclusions similar to those in this paper; for recent examples see, e.g., Goff (2011), Nida-Rümelin (2007), White (2007). The argument of the present paper, however, takes a distinctive approach that offers relative simplicity and reliance on relatively few assumptions about concepts.

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1 Hidden Nature Physicalism

Hidden nature physicalists are not eliminativists about experiences. They agree that

HNP1 There are experiences of qualities such as pain, itch, colors, odors, and so on.

Let us call these qualities “experiential qualities”. It is not necessary to determine exactly where the boundaries of the class of experiential qualities lie, as there are many clear examples whose inclusion in that class is not controversial, and the arguments given here will not depend on any disputable cases.

A key commitment of HNP can be stated as

HNP2 Experiential qualities are (identical with) physical properties.

This statement can be no clearer than the phrase “physical properties”, and it is controversial, to say the least, how that phrase is to be explicated. However, there will be wide agreement that any clarification that is acceptable to physicalists will be committed to at least the following claim.

HNP3 Physical properties and relations are those that are referred to in claims of what are uncontroversially natural sciences, or properties and relations that can be constructed from those.

“Uncontroversially natural sciences” will be understood here to include not only sciences as presently developed, but sciences as developed in the future, so long as they would be judged by contemporary thinkers to have remained uncontroversially natural sciences. An item, x , is “constructed” from a set of items $[y]$ when the presence of a particular arrangement of items in $[y]$ explains the presence of x . Naturally, much more might be said about construction, but the essential idea is familiar to physicalists who allow that liquidity, for example, is a physical property, even though it is not a property of any single, fundamental entity posited in our physics.³

Physicalists offer a variety of views about just which physical properties are identical with experiential properties, and form their hidden natures. Some look inward to neural properties and relations, such as activation levels or ratios of activation levels in groups of neurons. Others look outward, to molecular surface structures, or reflectance profiles, or molecules on the tongue or in the nostrils. What is common to this variety of approaches is that the adequate representations of hidden natures are far more complex than the customary representations of experiential properties with which they are held to be identical. The discussion to come will focus on this difference in complexity, and so will be able to bypass many details of particular physicalist proposals.

Our customary representations of experiential properties – the ones we use when not engaged in philosophy or the sciences of perception – are often single words. Sometimes these words, or short phrases, indicate some mild degree of complexity in the qualities they represent. Descriptions of pains, for example, often include predicates

³ For extensive discussion of issues connected with explicating construction, see Chalmers (2012).

indicating throbbing, burning, sharpness or dullness, and degrees of intensity. It is not unusual for colors to be described with mixed terms, such as “bluish-green” or “greenish-yellow”. Phrases such as “pastel green” and “painted in bold colors” are widely understood among people with normal color vision. Sounds can often be described in terms of chords and timbres, as well as pitches. Our customary representations of experiential properties do not, however, include representations of them as having dozens or hundreds or thousands of elements, which would be needed to adequately represent the complexity of what HNP offers as hidden natures – such items as energy levels across bands of wavelengths, molecular structures, or neural activations.

Physicalists do not explicitly declare that the adequate representation of hidden natures must be more complex than the customary representation of experiential properties with which they are identical – that is merely an evident conclusion from a survey of their proposals.⁴ There is, however, a reason why their proposals run this way, and why we are justified in taking this difference of complexity as part of the view. Namely, simple properties in natural sciences are ubiquitous in a way that experiential properties are not. Blue, for example, cannot be mass, or charge, or warmth, or neural firing per se, or ability to reflect light, and so on, simply because all those things can be present when blue is clearly not present. If there is to be a hidden nature of blue (or of an experience of blue), it must be some particular arrangement of physical individuals and properties; that is, it must be physical individuals having certain physical properties and standing in certain physical relations. We should thus be confident that any remotely plausible version of HNP will include the following claim.

HNP4 The adequate representation of hidden natures is more complex than the customary representation of experiential properties.

The adequate representation of hidden natures is a representation of what is supposed to actually exist. For example, if the hidden nature of blue is being a reflectance profile of such and such energies at such and such wavelengths, then anything that stands in relation to blue stands in relation to that reflectance profile. But hidden nature physicalists hold that the essential natures of experiential properties are *hidden*, that is, they hold that our experience does not give us any hint of the complexity that an adequate representation of what is really there would show to actually obtain. When we experience blue, or sweetness, we do not thereby have any inkling of the complexity involved in sets of neural firing rates or ratios, reflectance profiles, or molecular structures. We can express this hiddenness as follows.

HNP5 The complexity of the physical properties with which experiential qualities are identical is not manifest in our experience.

⁴ In what amounts to a survey of leading views, P. M. Churchland (1984, p. 29) presents reductive materialism (aka identity theory) as holding that “In discriminating red from blue, sweet from sour, and hot from cold, our external senses are actually discriminating between subtle differences in intricate electromagnetic, stereochemical, and micromechanical properties of physical objects”.

“Manifest” is not a term that is commonly used by physicalists, but it is useful to have some term to contrast with “hidden”, and “manifest” seems both suggestive of what is meant, and free of unwanted connotations.

It is plausible that intense exposure to a class of stimuli can cause changes in our experience of them, and that some of these changes can be increases in complexity of experience. For example, it may be that those who have tasted many wines actually have a more complex taste experience when sipping a certain wine than they would have had if that had been their first encounter with wine. It is not plausible, however, that the complexity of our experiences can increase to reflect the degree of complexity of neural properties, chemical structures, reflectance profiles, and so on that are routinely offered as candidates for hidden natures. Nor do hidden nature physicalists defend their views by denial of this implausibility. Wisely so: such an appeal would still leave a problem of accounting for our present, untrained, experiences.⁵

The aim of this paper is to show that hidden nature physicalism – the conjunction of HNP1 through HNP5 – is an unsatisfactory view. It is unsatisfactory because, as we shall see, it cannot explain how it is possible for our experience of a complex property to fail to manifest its complexity in our experience.

Issues about physicalism are sometimes expressed as issues about necessity. It is, however, important to distinguish HNP from the claim that experiential properties are necessarily connected to neural event properties, or to molecular surface structure properties, or to any other candidate for their hidden nature. That is because necessary connections can be connections between or among distinct properties. Even such closely related properties as being rectangular and having equal diagonals are distinct, though necessarily connected. Necessity can, of course, be a consequence of identities, but there being a necessary connection between F and G does not entail that $F=G$.

There is a possible view that says neither that experiential qualities are identical with physical properties, nor that they are necessarily connected with physical properties. According to this third view, experiential qualities are realized by physical properties; one instance of experiential property F is nothing but an instance of G1, although another instance of F may be an instance of G2. In any single instance, there will be no property *other* than one of the G properties that is distinctive of F experiences and that is present in that instance.

Hidden nature physicalists do not typically mention multiple realization, and they do not rest any of their conclusions on assuming it. So, this paper will take the identity claim, HNP2, as a commitment of the view to be considered. It should, however, be noted that a multiple realization view presents the same problem as an identity view; namely, the problem of explaining how, in a particular instance, we could experience F but not, as it might be, G1, even though there is nothing F-relevant about the experience other than its being G1. It should not be surprising, then, that the considerations to be offered concerning HNP will also apply to a multiple realization view (though it will be left to readers to verify that this is so).

⁵ My use of HNP5 is evidently indebted to Sellars' (1963) “grain argument”. It should be borne in mind, however, that Sellars aimed at a conclusion far stronger than any that is asserted in this paper, and relied on several assumptions that are also not made in this paper. (See Richardson and Mulenberg (1982) for discussion.) The present argument should thus be evaluated on its own merits.

Let us say a little more about the view that experiential qualities may be distinct from, but necessarily connected to, physical properties. Such necessary connections do not seem to be known to us *a priori*, and supposing they are *a posteriori* raises questions about what the ground of such connections could be. This paper does not advocate a necessary connection view as preferable to HNP. Neither does it disparage the conjunction of property dualism with *a posteriori* necessary connections. The only point of mentioning that view here is to distinguish it from HNP, which holds that experiential properties *are identical with* physical properties, although their hidden natures are not manifest in experience.

Post-Galileans are familiar with the view that physical properties such as reflectance profiles, molecular structures, and so on can cause appearances in which the complexity of the cause neither occurs nor is represented. This view is compatible with dualism: one can hold that the property corresponding to the way something appears is distinct from the physical property that causes the thing to appear that way. HNP is a stronger view. It says that experiential properties are identical with the physical properties that are their hidden natures.

One further preliminary point needs attention. It may be held that it is not experiential properties that have hidden natures, but rather that it is experiences themselves that have those natures. On this view, experiences are occurrences involving physical things (e.g., neurons, and their activations) that have physical properties and stand in physical relations, and the complexity of such occurrences is not manifest in our experiences. The complex of properties and relations that make an occurrence to be an experience of a particular kind, however, are not identical with experiential qualities such as those listed in HNP1. Let us call this view “experiential hidden nature physicalism” (abbreviated to EHNP) to remind us that what has hidden natures, according to it, are experiences rather than experiential properties.

There are two ways of developing EHNP. One way – EHNP_a – says that experiential properties are nowhere instantiated in our world. Two colors are two different properties, but nothing actually has them. Experiences that are, say, of blue and of red are experiences with different properties (different hidden natures) and they are somehow related to blue and red, respectively, but they are so related without benefit of relations to instances of these qualities, because there are (in our world) no such instances.

It is evident that EHNP_a faces a serious difficulty, namely, it must give a physicalist explanation of how different experiences can be related to different properties, without being able to appeal to relations between experiences and instances of those properties. This difficulty provides sufficient motivation for espousing an alternative development – indeed, the only logically available alternative development – of EHNP. On this alternative – EHNP_b – experiential qualities are held to be instantiated in our world. If this view is to avoid the difficulty for EHNP_a, it must further hold that the relation of different experiences to different experiential properties depends in some way on the physical relations in which experiences, or their parts, stand to actual instantiations of experiential properties.

Recognizing actual instantiations of experiential properties, however, leads us back to HNP as formulated above. That is because our scientific accounts of what are claimed to be hidden natures of experiential qualities offer only complex properties in physical things. It is not plausible that anything we will come to regard as uncontroversially a natural science will offer anything simpler than what we find in current accounts, in which, e.g., colored things are things with complex molecular surface

structures, or things with complex reflectance profiles, and things with a certain taste are things containing molecules with a certain structure. Thus, our focus in what follows will be on HNP as formulated above. The arguments to come will not be affected if we have EHNPb in mind.

2 Hidden Natures and Individuals

Color terms such as “blue” can be predicated without oddity of shapes or of ordinary things. For example, we can speak of a blue oval, whether the oval is a piece of paper or an afterimage. We can speak of a blue book cover, or a blue shirt.

Terms that would appear in adequate representations of hidden natures would not naturally be predicated of shapes or ordinary things. Neural properties are properties of neurons, or groups of neurons. Reflectance profiles involve reflectance percentages at wavelengths, molecular structures involve types of atoms and chemical bonds between atoms, compression waves are disturbances taking place in volumes of air molecules, and so on.

If experiential properties are identical with their hidden natures, the properties and their natures must surely be properties of the same individuals. HNP, therefore, must offer some account of the bearers of experiential properties and hidden natures, according to which these bearers can be the same individuals.

Details of such an account will vary with particular proposals for the hidden nature of experiential properties. It is plausible, however, that any such proposal can be formulated in a way that properly aligns the relevant individuals. For example, a blue object can be said to have the property of *having reflectance profile RP_b*, where a thing has reflectance profile RP_b just in case normal light is reflected from it with a spectrum of energies at wavelengths corresponding to those specified in the adequate representation of the profile for blue.⁶ A sweet fruit can be said to have the property of *having a high concentration of molecule M*. If afterimages are taken to be individuals that can instantiate colors, it may be proposed that they are groups of neurons, and their color property is identical with that group’s having the property of *having constituents that are firing in such and such ways*. If experiences of afterimages are taken to be neural events that can represent colors, then if anything has the represented color F, it has the property of *having reflectance profile RP_f*.

It is an assumption of this paper that any version of HNP that may be offered will have a way of phrasing its proposal so that whatever individuals are counted as bearers of experiential properties are the same individuals that are the bearers of the corresponding hidden natures. Thus, for any experiential property, F, and its corresponding hidden nature, HN_F, we can represent a consequence of HNP2 as

$$(x)[F(x) \text{ if and only if } HN_F(x)].$$

⁶ This formulation is simplified for readability. In general, common color names correspond to many kinds of reflectance profiles, and even particular shades may correspond to a plurality of profiles, so that the relevant property is actually *having some member of such and such set of RP s*. Similarly for the following examples: there are many sugars, and perhaps many kinds of neural events that correspond to having an afterimage of a particular kind.

3 The Core Argument

Let us imagine a contemporary art museum that exhibits a large blue sphere in one corner of a room and an equally large red sphere in the opposite corner. Normally sighted people will have visual experiences when they look at one of these spheres, and their experiences will differ when they look at one rather than the other.

There are many events in which the spheres and their colors are involved that are not experiences. For example, there may be a kinetic sculpture in the room that has a small mirrored surface. From time to time, this little mirror reflects some red light onto the ceiling, and at some other times it reflects blue light. We may assume that hidden nature physicalists do not count these reflecting events as experiences.

These remarks serve as background for the first two premises of an argument that will be developed in this section. This is the core argument; the argument of this paper *sans phrase* is the core argument plus the arguments against objections that are given in later sections.

- P1 There is a physical property that is common to and distinctive of experiences, and that is sometimes instantiated in our world.
- P2 For all distinct experiences (say, an experience of F and an experience of G, where $F \neq G$) the property F, but not G, enters into one of them in virtue of a characteristic relation, CR, and the property G, but not F, enters into the other in virtue of CR.

Thus, consider E1 and E2, which are the experiences a normally sighted person has when looking at our museum's blue sphere and red sphere, respectively. For these examples, P1 says that there is some physical property that E1 and E2 share, and share with other experiences and with nothing that is not an experience. P2 says that blue enters into E1 in some way, that is, there is a relation, CR, that relates blue, but not red, to whatever else is in the experience; and that red, but not blue, enters into E2 by standing in the same relation CR to whatever else is in E2.

"Enters into in virtue of CR" is a general term, designed to accommodate many accounts that might be given of experiences. To give a sense for the wide range of views it covers, consider first a sense datum theory that says that E1 involves a relation to a blue sense datum. Then blue enters into the experience by being a property of a sense datum that is, in turn, related to whatever else is in the experience. (CR will then be "factorable" into instantiation in a sense datum plus a certain relation, say CR', of the sense datum to whatever else is in the experience.) Red will not be a property of any sense datum that stands in CR' to whatever else is in the experience, E1. The converse will hold for E2: red, but not blue, is a property of a sense datum that stands in CR' to the remainder of E2. (We need not suppose that CR' is a simple, single relation; it may be proposed that the occurring of an experience requires a sense datum to stand in a number of specific relations, CR1', CR2' . . . to various parts of whatever else is in an experience.)

Consider now a different proposal: experiences are neural events that represent external, physical object properties. Blue, but not red, enters into E1 by standing in the converse of the representation relation to whatever else is in E1, and red, but not blue, enters into E2 in the same way. (Again, we need not assume that representation is a simple, two term relation; perhaps it requires a large number of relations between a

represented property and various parts of experiences that represent it, and perhaps many other things.)

The views of the last two paragraphs are not being asserted or denied: they are illustrations offered to bring out the openness of the formulation of P1 and P2 to a wide variety of possible accounts of experiences. This completes the explanation of how P1 and P2 are to be understood, and brings us to the question of why we should suppose that physicalists would accept them. The reason is that physicalists regularly appeal to theoretical virtues in support of physicalism. But denial of P1 would imply that there is no physical structure that makes an experience an experience. Denial of P2 would imply that there is no physicalist account of why a particular experience is an experience of blue rather than any other property. Such consequences seem logically possible. Perhaps it is just an illusion that experiences are a natural kind, or anything close to that. Perhaps there are just some configurations of matter and energy that are experiences, but there is no physical structure that is common to and distinctive of such events, and no systematic relation between colors and the brain events in normally sighted people that determines which experiences they have when they look at each of our spheres. But a theory that proposes such a view has no virtue in it. Nor do actual hidden nature physicalists espouse views that lead to such unwelcome consequences.

This discussion supports several consequences. One is that it is reasonable to stipulate that the physicalism to be considered in the remainder of this paper accepts P1 and P2. Let us add this explicitly to our characterization of HNP.

HNP6 P1 and P2 (understood as just explained) are true.

The discussion leading up to HNP6 also explains the ground for the next two premises of the core argument.

- P3 What stands in CR to the remainder of what is required for an experience determines what the experience is of.
- P4 For any experience, E_i , of a property, F , there is a state of affairs S_i and a description, $D(S_i)$ such that (a) $D(S_i)$ is an adequate, purely physical description of S_i , (b) $D(S_i)$ includes a relation, CR , that holds between F and whatever else is in E_i , and (c) $D(S_i)$ includes a description (although not necessarily identified as such) of whatever structure is common to experiences. (CR , like the CR' imagined above, need not be a single relation – it may be a number of relations of F to various items that are required for there to be an experience.)

A further premise that will prove crucial to the remainder of this paper is

- P5 The relations that we find in uncontroversially natural sciences are all extensional.

This means that, for all relations we find in our natural sciences – causation, distance, relative size, and so on and on – if Rxy and $y=z$, then Rxz . P5 does not exclude the possibility of constructing non-extensional relations from physical individuals and properties, and physical relations, and we shall be much concerned with that possibility as the paper develops. But the relations that are available to physicalists for use in constructing non-extensional relations are all extensional.

If the CR in P4 were thought to be non-extensional, physicalists (including proponents of HNP) would be committed to holding that it can be constructed from materials available to physicalists, and this would imply (by P5) that it can be constructed using only extensional relations. We can thus suppose that if $D(Si)$ in P4 includes a non-extensional relation, then there is another description, $D'(Si)$ that describes the same situation, and whose relational terms are all terms for extensional relations. So, we can, without loss, stipulate that the $D(Si)$ of P4 is a description, all of whose relational terms are terms for extensional relations. Henceforth, we may take the “purely” in “purely physical description” to indicate that the description is given in such a way that all its relational terms are terms for extensional relations.

We are now in a position to see a key difficulty for HNP. It says that $F=HN_F$, and (see section 2) that $F(x)$ iff $HN_F(x)$. We can thus substitute HN_F for F in $D(Si)$ *salva veritate*. Moreover, whenever F stands in CR to the remainder of an experience, so will HN_F . But a property’s standing in CR to the remainder of an experience is what makes the experience an experience of that property. So, we should expect that we have experiences of HN_F . That, however, is false on its face, and certainly not acceptable by HNP – for, if we did have such experiences, there would be nothing *hidden* about the “hidden nature”.⁷ A little more formally, in consequence of property identity,

P6 HN_F can be substituted for F in $D(Si)$ *salva veritate*.

P3, P4 and P6 taken together imply

C1 An experience of F is equally an experience of HN_F .

Affirming the hiddenness of hidden natures, however, is tantamount to affirming

P7 C1 is false.

Therefore, since we have seen support for P3 and P4, we should conclude that

C2 P6 is false.

But

P8 P6 is a consequence of the identity of properties and their hidden natures affirmed by HNP.

So,

C3 HNP is false.

⁷ One can, of course, insist on an extensional reading of “an experience of F ”, according to which an experience of F is also an experience of HN_F . But phenomenological plausibility requires a hidden nature physicalist to have *some* verb that can be used to express the hiddenness of hidden natures – the idea that we do not \langle Verb \rangle F ’s hidden nature just by \langle Verbing \rangle F ; and the argument can then be run with whatever verb is offered for this purpose.

4 An Objection to the Core Argument

A key objection to the core argument is that it fails to rule out what we may call a non-extensionalist scenario (abbreviated as NEXT). This scenario is inspired by proposals for naturalizing intentionality familiar from work by Chisholm and Sellars (1958), Sellars (1963), Dretske (1995), Fodor (1987), and many others. An essential part of such proposals can be described abstractly as taking the following form.

NI Intentional context IC obtains iff extensional context EC obtains.⁸

On the left side, we have contexts that do not permit substitution of identicals *salva veritate*; e.g., “Jones believes Clemens wrote Huckleberry Finn” cannot be inferred from “Clemens=Twain” and “Jones believes Twain wrote Huckleberry Finn”. But NI says that IC – for example, “Jones believes Twain wrote Huckleberry Finn” – is a state of affairs that obtains iff some state of affairs, EC obtains, where EC is adequately describable solely in terms for physical individuals, physical properties, and physical, i.e., extensional, relations. To put the matter less formally, the idea is that non-extensional relations such as believing can be reduced to, or constructed from, sets – perhaps very complex sets – of extensional relations among purely physical things and properties.⁹

The objection to the core argument to be considered in this and the following sections claims that a parallel scenario holds for experiences.

NEXT

The context “S has an experience of F” is non-extensional – one cannot infer from it that S has an experience of HN_F , even though $F=HN_F$. But S’s having an experience of F is a state of affairs that obtains iff a certain fact EF obtains, where all relations composing EF are purely physical (thus, extensional) relations (and so, statements of EF are true iff the same statements with F replaced by HN_F are true).

Again, we can put this a little less formally by saying that while “S has an experience of F” is a non-extensional relation, it can be reduced to, or constructed from, sets – perhaps very complex sets – of extensional relations among purely physical things and properties.

If NEXT is true, something is wrong with the core argument. Since that argument has several premises, there are several places in which one might think it goes wrong. For example, one might think that HNP does not really commit one to P6. That is equivalent to proposing NEXT, because it implies that a non-extensional relation could be constructed from a set of extensional relations. Or, one might think that replacing a constructed CR in P4 with its purely extensional construction would introduce some kind asymmetry between F and HN_F . Again, this is equivalent to proposing NEXT. (One might, of course, allow for irreducible non-extensional relations. But since those are not found in uncontroversially natural sciences, allowing them amounts to

⁸ “Intentional” is used here because the problem starts with contexts that contain verbs indicating aboutness. Of course, the reason NI is a difficult problem is that such verbs introduce intensional (or hyper-intensional) contexts.

⁹ Non-extensional relations may, of course, continue to appear in partial constructions or reductions of non-extensional relations. For example, progress in constructing the relation of believing may occur in a view that still contains the non-extensional relation of having a function of indicating. But the project of naturalizing intentionality cannot be regarded as having been completed unless, at the end of the day, only physical, extensional relations appear in the construction.

abandoning physicalism, and thus conceding that HNP is false.) The lesson of these instances seems to be general: if the conclusion of the core argument is to be avoided, it must be that experiencing *F* is a non-extensional relation that can be constructed from physical individuals, properties and extensional relations.

But we have no coherent understanding of how NEXT could be true; or so the remainder of this paper will argue.

5 A Key Disanalogy

If one thinks that intentionality cannot be naturalized, it is unlikely that NEXT would be found attractive, and thus HNP would be in doubt. This paper does not take this line: it grants physicalists the assumption that some version of NI will prove successful for propositional attitudes such as believing and desiring. It argues, instead, that there are differences between states like believing and desiring, and experiences, such that even if NI is supportable for believing and desiring, NEXT is not supportable.

The key disanalogy to be exploited here is that in the naturalization of intentionality, we have many distinct properties to work with, but in the case of HNP it is claimed that, for experiential properties, $F = HN_F$.

Consideration of water and H_2O will provide an illustration of the relevance of this disanalogy and some other useful points. We may begin by noting that intelligent, well informed people in 1600 sometimes believed they were drinking water, but none believed they were drinking H_2O , even though $water = H_2O$. How could that be? A plausible account goes as follows. They were aware of a set of properties – liquidity, low viscosity, transparency, ability to dissolve salt, ability to turn into a solid that floats on the same, slightly warmer liquid – whose conjunction, in our world, uniquely qualifies water. This conjunction of properties is not identical to the property of being composed of H_2O molecules. Our forebears were thus able to stand in purely physical relations to the conjunction of listed properties without standing in the same physical relations to the property of being composed of H_2O molecules. It is thus plausible that there can be a physical account of their believing they are drinking something that has the conjunction of listed properties that is not a physical account of believing that they are drinking something composed of H_2O molecules.¹⁰

This little explanation relies on the premise that the conjunction of listed properties is not the same property as the property of being composed of H_2O molecules. If identity had been claimed for those properties, this account would not work. But HNP claims property identity for experiential properties and their hidden natures. So, it cannot give a parallel account of how one can have an experience of *F*, that is not an experience of HN_F .

It may be suggested that the conjunction of listed properties is, after all, the same property as the property of being composed of H_2O molecules. This suggestion, however, commits one to the implausible claim that it is logically impossible for there

¹⁰ This paragraph will remind readers of other discussions, notably those of Kripke (1980) and Chalmers (2010). But, as with simplicity and Sellars' grain argument, it should be noted that the use of the water example is targeted to a narrow conclusion about HNP, and that it does not rely on assumptions often associated with the example – e.g., assumptions about the relation between conceivability and possibility. The use of the example in this paper should be evaluated on its own merits.

to be a world in which the conjunction of listed properties is instantiated in something not composed of H₂O molecules.¹¹

It is important to be clear that these remarks do not impugn the identity of water and collections of H₂O molecules. Water is the substance that has the conjunction of listed properties and is also the substance that is composed of H₂O molecules. Neither do these remarks conflict with the claim that H₂O is the nature of water: H₂O is indeed what the substance that has the conjunction of listed properties is composed of. Nor is there any reason to avoid saying that H₂O is the hidden nature of water: it is water's nature, and it is "hidden" because it took scientific effort to discover that nature.

In short, although water is the same as collections of H₂O molecules, the conjunction of listed properties is not the same as the property of being composed of H₂O molecules. The benign character of talk of water's hidden nature thus cannot be taken over to support the view that there is no problem in holding that experiential properties are identical with their alleged hidden natures.

How can these reflections be applied to NI and NEXT? Let us consider the Twain-Clemens example. Jones believes Twain wrote Huckleberry Finn and it is plausible to suppose that that's because "Twain" is what it says on the title page. It does not say "Clemens". That is possible because we have two properties – the property of being spelled "T-w-a-i-n" versus the property of being spelled "C-l-e-m-e-n-s". Jones can stand in different physical relations to these different properties. (For example, Jones can have a retinal pattern caused by "Twain" but not by "Clemens".) This fact opens a space for a variety of accounts in which one property stands in a set of physical relations in which the other property does not. No such space would be open if we were to hold that there was just one property here.

Representation is commonly held to obtain only if misrepresentation is possible. So one can, for example, represent a horse (or, represent something as a horse) when no horse is present. (Perhaps one is caused to represent a horse by stimulation from a donkey at dusk.) Plausible (although not uncontroversial) accounts can be given along the following lines. Some state of a representer is typically caused by stimulation from horses and leads to horse-appropriate behavior, but in untoward circumstances that state can be caused by stimulation from donkeys. The motivating idea behind such accounts is that causal relations are extensional, physical relations; neural transactions leading to behavior, and behavior itself, are physical processes; and constellations of extensional relations (perhaps involving evolutionary histories of representers) enable us to state (at least in principle) a purely physical fact such that it obtains if and only if the representer represents a horse.

It is evident that this kind of account can yield misrepresentation (or failure of representation) only if the represented and misrepresented (or non-represented) properties are different properties. One could not offer such an account if the properties were the same, for "both" would stand in the same causal or any other extensional, physical relations to the representer.

¹¹ Even if one were willing to allow this implausible logical impossibility, property identity would not be assured. Triangular equiangularity and triangular equilaterality are logically equivalent, but not obviously the same property. Chisholm (1992), e.g., takes them to be distinct properties.

6 Concepts (and Phenomenal Concepts)

Conceptual dualism is the view that experiential properties and their hidden natures are identical properties, but we have different concepts of them.¹² Such a view may be held in a simple version that notes only that some of our concepts require extensive developments in science for their acquisition, whereas others are more readily available. Or, it may be held in a phenomenal concept version that focuses on the idea that phenomenal concepts provide a way of thinking that can be instantiated only during the occurrence of experiences whose characterization involves those concepts, or imaginings of such experiences. The relevance of either version is that it may seem to supply a way of explaining how we can have an experience of F without having an experience of HN_F . To wit: Although the properties are the same, we can apply one concept without applying the other, and what our experience is of depends on which concept it is brought under in the experience.

Conceptualist proposals of this kind bring with them a presupposition about the involvement of concepts in experience that runs against some traditional ideas. For example, if one supposes that concepts are acquired from (or, abstracted from) experiences, it will be difficult to understand how a new concept could be acquired.¹³ This paper, however, will not assume either conceptualism or its denial. The problem for conceptual dualism (in either form) is that there can be no physicalist account of how we acquire distinct concepts of what is allegedly one property. The problem of explaining differential representation without difference of properties, for example, merely reappears as the problem of accounting for differences in concepts without differences of properties.

If concepts can be acquired, and HNP is true, then there is some set, call it $[A]$, of physical individuals, properties, and physical (thus, extensional) relations such that, when they obtain, a subject acquires a concept C . Wherever an experiential property, F , occurs in such an account, its hidden nature, HN_F can be substituted *salva veritate*. If the obtaining of $[A]$ explains why the concept F is acquired (and not the concept G , where $F \neq G$), it should just as well explain why the concept HN_F is acquired. After all, $F=HN_F$, according to HNP, and so HN_F occurs in all the causal and other physical relations that F occurs in. But no one, including proponents of HNP, affirms that we acquire the concepts of hidden natures whenever we acquire experiential concepts. So, HNP will have no explanation for a fact about which all agree.

If this argument were offered just by itself, there would be an obvious, natural reply. Namely, the acquisition of concept C by subject S is a non-extensional fact, but it can be constructed from purely physical facts. But HNP cannot avail itself of this reply; appeal to concepts was supposed to be a way out of the difficulty of the previous section. It cannot be such a way out, if it has to suppose that there is *already* a solution to the problem in section 5.

It has been suggested to me that one property can occur in two sets of relations, and that this fact might be used to explain how we can have distinct concepts of the same property. Thus, perhaps, there is a certain set (call it $[A_1]$) of physical individuals, properties and physical relations such that when they obtain, I acquire the concept F ,

¹² For explanation of “conceptual dualism” see Chapter 2 of Papineau (2002).

¹³ But see Gennaro (2012) for an attempt to overcome this difficulty.

and become able to bring my experience under that concept. But scientific approaches to instances where $[A_1]$ occurs discover that $[A_1]$, or some constituent or subset of it, also occurs in another set of relations. We can thus introduce another set, $[A_2]$, that contains all or part of what is in $[A_1]$ plus relations that are not in $[A_1]$. Scientific approaches thus provide a basis for the formation of a different concept, G , corresponding to $[A_2]$.

An illustration may help to fix our ideas. The property of being a right angle could be thought of as what one gets by bisecting an isosceles triangle, or as the angle that guarantees that a triangle in which it occurs will have the Pythagorean property (i.e., that $a^2 + b^2 = c^2$). If we call these two “ways of thinking” of the property of being a right angle “two concepts of a right angle”, perhaps we have a model of two concepts of one property. Moreover, it is plausible that a novice geometer could bring right-angledness under one of these concepts without (yet) being able to bring it under the other.

However, this case cannot serve as a useful model for HNP. The problem is that neither so-called “concept of a right angle” is a plausible candidate for the hidden nature of right-angledness. Our two concepts correspond to distinct properties to which right-angledness is *related*. The hidden nature of an entity E may well consist in its having an internal structure, i.e., a set of constituents that stand in certain specific relations. H_2O is an example. But that is not to be confused with E 's standing in relations to things other than E . This point holds whether we take E to be a property or an individual, and whether we take the relations to be necessary (as in the geometrical case) or contingent.

The sets identified three paragraphs ago are complex, and so it is easy to miss the key point. To wit: the suggestion under discussion does not give us any one item such that we can see how we can bring it under a concept of F but not a concept of HN_F , even though $F=HN_F$. At best it can give us experiences of F such that we do not thereby know much about what F is related to. It does not explain why those are not also experiences of HN_F such that we also do not thereby know much about what HN_F is related to. If one now says that HN_F just *is* the relations into which an experience enters, then one must either say the same about F , or give up the identity of F and HN_F .

Let us now turn to the special version of conceptual dualism that appeals to phenomenal concepts, and their availability only during the occurrence or imagining of experiences. This appeal offers no help. Wherever experiential properties occur, so will their hidden natures if, as HNP says, these properties are identical. So, either both will occur in the same way in the fact that is the occurring of an experience, or neither will. HNP plus the phenomenal concept strategy will have no way of explaining why the reflectance-profile complexity of blue, or the neural complexity of the experience of blue, is not as manifest in experience as blue.

No help can be obtained by invoking Loar's (1990) idea that phenomenal concepts are recognitional concepts. If HNP is assumed, there will be some set $[Bacq]$, of physical individuals, properties and physical (thus extensional) relations such that, when they obtain, a subject acquires recognitional concept C , and there will be some similarly restricted set $[Buse]$ such that when its relations obtain among appropriate items, a subject uses recognitional concept C . Wherever F occurs in these sets, HN_F will occur in exactly the same way. There will be no explanation of how there can be a recognitional concept of F but no recognitional concept of HN_F . (If F does not occur in

these sets, there will be no explanation of how a recognitional concept can apply to one experiential property rather than another – of how, e.g., we could have a recognitional concept of blue that was not also a recognitional concept of red.)

It is also of no help to insist on the obvious fact that we do have experiential concepts long before we acquire the concepts of their alleged hidden natures. If one denies HNP, with its claim of property identity, one has the beginning of an explanation for this fact: There are two properties, so two sets of physical relations in which we can stand to those properties, so the set of circumstances that explains acquiring the concept of one of them need not explain the acquiring of the concept of the other. No such sketch of an explanation is available to HNP.

It may be suggested that what our experiences are of depends not only on their causes, but on what responses we are capable of making to them, including responses that depend on which concepts we possess. According to this suggestion, hidden natures are not manifest in our experiences because we lack concepts for them. Alternatively stated, our experiences do not represent the hidden natures of experiential properties because they are not able to lead to conceptual responses in which the hidden natures would be articulated. Now, this suggestion is problematic for proponents of HNP because it already relies on supposing there is a difference of concepts without difference of properties. But the suggestion is sufficiently plausible that it is worth pointing out another difficulty for it. To wit: (alleged) hidden natures are complex, and being complex – having many parts, or having more parts than something else – are concepts that are easily acquired and are likely possessed by normal people by the time they are 10 years old. Yet the hiddenness of what are claimed to be hidden natures includes the fact that there is nothing manifest in our experiences that gives the faintest hint of the high degree of complexity that the hidden natures are taken to have.

There is, of course, no problem in *applying* different concepts to a property. For example, blue may fall under the distinct concepts *is instantiated in individual a*, or *is Jones's favorite color*, or *is correlated with oxygen deprivation in humans*. These concepts, however, are concepts of distinct properties. The pattern here is parallel to the case of things: one and the same thing can bear distinct (first level) properties, and one and the same property can bear distinct (second level) properties. Proponents of HNP, however, claim identity of experiential qualities and their hidden natures. They do not suggest that hidden natures are second level properties of experiential qualities, and indeed could not consistently do so.

7 Causation vs Explanation

This paper claims that HNP has no explanation of why our experience is of experiential properties, but not of their hidden natures. Reflection on this claim may lead to the suggestion that explanations are non-extensional contexts, and thus we should not be surprised that an explanation of how an experience is of an experiential property, F , is not an explanation of how that experience is of its complex hidden nature, HN_F . We might be prepared to expect this difference, even if causal and all other physical relations hold between x and F iff they hold between x and HN_F .

It is doubtful, however, that this suggestion can work. An experience of F is an actual state of affairs, and if physicalism is true, it is an actual physical state of affairs. Its constituents are physical individuals that have only physical properties and stand in physical (thus, extensional) relations. If HNP is true, HN_F occurs in this state of affairs exactly where F occurs in it. If we have two properties – e.g., if F is blue and G is green – we can explain why one state of affairs is an experience of F and another state of affairs is an experience of green. It will be because G (or, if one prefers, G’s hidden nature) occurs in a state of affairs that is exactly like an experience of F, except that G occurs in it in the same way F occurs in the experience of F. But if F is held to be identical with HN_F , the latter hidden nature will have a claim for being what the experience is an experience of that will be symmetrical with the parallel claim for the experience’s being an experience of F; and so, there will be no explanation of why the experience is of F rather than of HN_F .

8 Acquaintance

Michael Tye (2009) gives an account of phenomenal consciousness that crucially involves the relation of acquaintance. Acquaintance is non-factual knowledge and its role in Tye’s account can be indicated through the following quotation.

What needs to be appreciated is that knowledge by acquaintance of an entity is a kind of non-conceptual, non-propositional thing knowledge. I know the shade red₂₉ simply by being directly acquainted with it via my consciousness of it. In the case of the phenomenal character of the experience of that shade, I know it in just the same way – by acquaintance. Our consciousness of things, both particular and general, enables us to come to have factual knowledge of them, but that consciousness is not itself a form of factual knowledge at all. It serves as the ground or warrant for beliefs about what we experience, but it is not itself a kind of belief. Knowledge by acquaintance is the foundation for knowledge by description, but it is a completely different kind of knowledge. (Pp. 136–137.)

Tye says that

the physicalist can maintain that there are true *a posteriori* identities of the following sort:

- (17) Red=physical property R (for example, so-and-so reflectance).
- (18) Experiencing red=standing in physical relation M to physical property R. (P. 139.)

And he further holds that

The *nature* of the color red is not completely known to us in acquaintance. Acquaintance does not tell us what that nature is. To know the nature of red, we need to know *that* the nature is so-and-so. And knowledge by acquaintance does not issue in knowledge of this sort. (P. 143; emphases in original.)

It is not clear that Tye is willing to say that we are acquainted with the hidden nature of red – his characteristic phrasing has red as the object of acquaintance. So, let us consider both available alternatives.¹⁴

- A. We are acquainted with red, but not acquainted with its hidden nature. Since red = its hidden nature, it follows that acquaintance is a non-extensional relation. If it were held to be irreducible, physicalism would be abandoned, since relations in uncontroversially natural sciences are extensional. But holding it to be reducible returns us to difficulties which by now should be familiar. There will be some physical state of affairs in which red, and therefore its hidden nature (since these are identical) occurs, and there will be no explanation of why we are acquainted with red, but not its hidden nature.
- B. We are acquainted with red and we are acquainted with its hidden nature. But red is manifest in our experience, while the complexities of its hidden nature are not. Therefore, being acquainted with red will provide no explanation of how it is possible for the complexities of red's hidden nature to remain hidden. There will have to be some *other* relation, such that we can stand in it to red, but not to red's hidden nature. It follows from HNP's claim that $\text{red} = \text{HN}_{\text{red}}$ that this relation will not be extensional, and with respect to that relation, we will again have the problem of alternative A.

Tye points out that when we come to knowledge by description, we can know that we experience red, but not know that we experience its hidden nature. Taken as an expression of the hiddenness of hidden natures, this is, of course, correct. However, we can know the one but not the other only if the concepts of red, and of its hidden nature, are distinct; and thus we again face the problem discussed in section 6, of accounting for distinct concepts without benefit of distinct properties.

9 Conclusion

The core argument of section 3 provides a reason for rejecting hidden nature physicalism. In brief, HNP's physicalism commits it to extensionality of available relations and this, together with its identity claim, blocks accounting for the manifest/hidden difference (which, however, it correctly recognizes).

Since establishing this problem, we have examined the prospects for a way out. We have tried many approaches, and the upshot has been repeated failure. Apparent ways out have proven to require a distinction that HNP's identity claim does not permit (unless we assume that we have somehow *already* found a way to construct non-extensional relations from extensional relations that can work for experiences and not just for propositional attitudes).

¹⁴ It may be noted that our first quotation from Tye says that one is "directly acquainted with red₂₉ via [one's] consciousness of it." But the hiddenness of hidden natures can be expressed as the claim that, in some sense, hidden natures are *not* in our consciousness (see HNP5). So, there seems to be some reason to attribute the first alternative below to Tye; but the matter is unclear, since it also seems natural to think that a relation that is stated emphatically to be non-conceptual and non-propositional would be an extensional relation.

One can, of course, respond to this situation by saying “Someday, we will come to understand how to construct experiential non-extensional relations from extensional relations”. But our discussion shows that this promissory note is not backed by any actual collateral. So, although HNP can be given initially plausible formulations, it cannot actually be a solution to any problem.

Forestalling likely objections has required careful formulation of HNP, but the essential difficulty can be briefly stated and is easy to grasp. Moreover, key ideas used in discussing HNP, such as relative simplicity of experiential qualities, and remarks about water and H₂O, have been quite familiar for a long time. One may thus be inclined to wonder: If HNP were really as problematic as this paper makes it out to be, how could this not have been well recognized long since? The answer is that (i) the familiar ideas taken singly are not sufficient to establish the problem for HNP; (ii) even taken together, they may not work against all views that have been taken to be versions of physicalism; and (iii) they have often been put forward in association with additional assumptions that not all physicalists accept. For all these reasons, it would be easy for proponents of HNP to come to think of the familiar ideas as ineffective against physicalism. This paper has shown, however, that when certain plain and well accepted facts are properly stated, brought together in the right way, and targeted with the right specificity, it is clear that HNP is a deeply unsatisfactory view.

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