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Science and the Phenomenal*

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The Hard Problem of the mind is addressed and it is argued that physical-phenomenal property identities have the same status as the identification of an ostended bit of physical space and the coordinates assigned the spot on a map of the terrain. It is argued, that is to say, that such identities are, or follow from, stipulations which *interpret* the map.

1. Introduction. Once in a while someone writes a book that, however briefly, turns one of the big squishy debates that are the mainstay of philosophy into a sharply focused discussion. Recently, David Chalmers's book (1996) has done this for questions about the nature of mind. Without trying to defend his way of setting things up, I will accept the terms in which he casts the debate and address myself to what he calls the Hard Problem, viz., the problem of finding a place for phenomenal properties in a physical world.

This paper has three parts: I will say what the hard problem is supposed to be, describe a way of thinking of physical theories that is useful in this context, and finally introduce the proposed solution to (or, if you like, dissolution of) the problem. What I am going to suggest is that physical-phenomenal property identities have the same status as the identification of an ostended bit of physical space and the coordinates assigned the spot on a map of the terrain, which is to say that they are, or follow from, stipulations which interpret the map. Experiencing a salty taste is the very same thing as having a high level of activation in the salty receptor on my tongue and being in pain is the very same thing as having firing c-fibers, in the same way that being

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here¹ (i.e., being at *this* spot) is the very same thing as being at $\langle c, b \rangle$ (where $\langle c, b \rangle$ are just the coordinates assigned by my map of the space to the corner table in Cafe Barrone at which I am seated). In the second part of the paper, I will run through some influential arguments that are supposed to stand against any identification of phenomenal properties with their physical bases, the arguments from which the *hardness* of the hard problem is supposed to stem. In the third part, I will try to say a little in a positive vein about how we should think of the phenomenal feel, i.e., the *ouch*-ness, of a pain, on the view that I am suggesting, by exploring how we should think about the *here*-ness of my location. The suggestion will be that just as *here* is an ordinary spot, to which I happen to bear a special relation (viz., being-at), my pains are ordinary events to which I bear a special relation (viz., being-conscious-of). What distinguishes *here* from other spots is only that I am *at* it, and what distinguishes my pains from the ordinary run of physical events is only that there is something it is like for me for them to occur, I *feel* them, I am *conscious of* them. We should focus our reductive aspirations on these *conscious-of* relations, and I will say a few words in closing about these.

2. Part I.

2.1. *Separating the Psychological from the Phenomenal.* The nature of a physical system's psychological properties, understood as the characteristic causes of identifiable behaviors, is unmysterious; such properties are just ordinary physical properties identified by their functional role in the production (or explanation) of behavior. A system's phenomenal properties are those such that there is something *it is like* for the system to be in them, and—unlike psychological properties—they are supposed to be deeply enigmatic. Here are Chalmers's definitions:

A state is mental in [the psychological] sense if it plays the right sort of causal role in the production of behavior, or at least plays an appropriate role in the explanation of behavior. According to the psychological concept, it matters little whether a mental state has a conscious quality or not. What matters is the role it plays in a cognitive economy. (Chalmers 1996, 11)

The *phenomenal* concept of mind [by contrast] . . . is the concept of mind as conscious experience, and of a mental state as a consciously experienced state. (Chalmers 1996, 11)

1. Imagine that the italicized indexicals are accompanied by ostensions.

a mental state is conscious if there is something it is like to be in that mental state. To put it another way, we can say that a mental state is conscious if it has a *qualitative feel*—an associated quality of experience. These qualitative feels are also known as phenomenal qualities, or *qualia* for short. (Chalmers 1996, 4)

The problem, as Chalmers describes it, is this; no matter how careful and elaborately detailed our account of a system's physical properties (including its psychological properties), its phenomenal properties (whether it *has* any and what they are) are left out; the phenomenal *by its very nature* is supposed to fall outside the scope of physical description. Again, in Chalmers's words:

when someone strikes middle C on the piano, a complex chain of events is set into play. Sound vibrates in the air and a wave travels to my ear. The wave is processed and analyzed into frequencies inside the ear, and a signal is sent to the auditory cortex. Further processing takes place here: isolation of certain aspects of the signal, categorization, and ultimately reaction. All this is not so hard to understand in principle. But why should this be accompanied by an *experience*? And why, in particular, should it be accompanied by *that* experience, with its characteristic rich tone and timbre? (Chalmers 1996, 5)

A physical system's behavior (the way that it interacts and responds to its environment) is (supposed to be) completely understandable in terms of its psychological properties, rendering the phenomenal properties causally superfluous, added after the fact . . . like icing to a cake.

2.2. *Physical Theories*. A bit of apparatus: by 'physical theory' I will mean the sum total of our opinions about the physical world; from the more or less vague and inarticulate beliefs implicit in the way we navigate to the quantitatively formulated products of professional science. A theory consists of a catalogue of the kinds of thing there are in the world (in the form of a list of basic individuals, the quantities which characterize them internally, and the external relations they bear one another), laws describing the nomological relations between these, and facts detailing their actual arrangement. A theory consists, that is, of an ontology, a set of laws, and a list of facts, and can be represented by a space of metaphysically possible worlds (one for each mathematically describable assignment of properties to arrangements of individuals), with a distinguished class corresponding to the physical possi-

bilities (those which satisfy the laws), and a more narrow set of epistemic possibilities (those not ruled out by known fact or law).²

A perceiver's ideas about the composition and structure of the space of possibilities is the relatively constant background over which the more transient part of his doxastic state can be represented (in the way familiar from formal models of decision-making) by a dynamic probability distribution over the space, which gives the likelihood that a world contained in any finite volume is actual. In the simplest case, i.e., the case in which the perceiver is unprejudiced and has determinate and fixed opinions about ontology, only epistemic possibilities have a non-zero probability, and it is the same for all of them. Every time such a perceiver learns something about the world, he locates himself more narrowly in possibility space, ruling out worlds which fall in some parts of the space and raising the probability of those falling in (any finite volume of) that which remains.

These are just remarks about the structure of our theories and should not be unfamiliar or controversial; the relatively abiding and often tacit ideas about the stuff of which the world is made (the individuals, properties, and relations out of which it is built) provide a sort of map of the space of possibilities, and specific beliefs keyed directly to individual perceptual episodes (beliefs about the way that stuff is actually arranged) correspond to regions or volumes of that space. Our ontological opinions depend holistically on experience in the same way that a cartographer's opinions about the shape of the landscape depend on the full set of his interactions with it,³ and just as it is only once the cartographer has worked up a sketch of the landscape that a quick

2. The view about possibility at work here is this: the composition and structure of the space of possible worlds are determined by one's views about ontology (its composition is determined via a combinatorial principle by the catalogue of the basic individuals and quantities, and its structure is determined by the mathematical relations between the latter) so talk about possible worlds is just a picturesque way of talking about the internal structure of the actual world, and it is the job of the part of our physical theories which gives the ontology to get that right.

3. There is some choice about what to take as the epistemic primitives here; one can adopt a third-person point of view, and insist that a perceiver's whole doxastic state (the general ontological beliefs which determine the structure of her possibility space, together with the particular beliefs and desires which associate probabilities and values, respectively, with various volumes of that space) be implicitly defined in terms of behavior. Or, more modestly, one can take beliefs and desires for granted, and let the structure of the map be implicitly defined by the role it plays, in conjunction with these, in determination of behavior. The difference this makes will depend on how much structure is attributed a doxastic state and how narrowly behavior is construed (does it include, for instance, dispositions to behave thus and so in counterfactual circumstances?).

look around him will tell him where he is, it is only once we have a map of the space of possibilities that particular experiences provide information as to our whereabouts by identifying landmarks in the vicinity whose map locations we know.⁴

That is a very brief sketch of what can be a complicated and quite rich way of conceiving of our representations of the physical world, but it is all we need for our purposes. The important thing is to see how to think of those representations as maps, specifically, maps by which we steer, practical agency as a kind of navigation (steering one's course through the space of possibilities), and theorizing about ontology as a sort of cartography (charting the structure of that space). I do not mean this in any metaphorical sense; the making and manipulation of the kinds of maps we are more familiar with (road maps, shopping center directories, and the like) are special cases of a process that includes also the formation of representations of the more abstract space of possibilities (whose structure reflects the internal structure of the actual world in the way described by a principle of recombination).⁵

2.3. Maps and Interpretation. Some points about interpretation: to interpret a map is to associate parts of the map with parts of what it represents, i.e., points on the map with points of space, and (since it is meant to carry information about what different regions of space are *like*) properties of the one with properties of other.⁶ If red is associated with highway, green with forest, and blue with lake, for instance, red, green, and blue parts on the map will signify, respectively, highway-ed, forested, and lake-filled parts of physical space. How is this association accomplished? The story is easy when we have a 'bigger' representation which includes both the map and what it represents, e.g., a language with names for both or an atlas with a 'key' which associates map symbols with English words, for then the interpretation is just an

4. Watching a cartographer working up a map of an unfamiliar terrain from scratch is extremely instructive for the purposes of understanding how our opinions about the world are shaped by experience. The cartographer's progress on his map—how much experience he has before he sets pencil to paper, what he fills in first and what he leaves until later, how he revises—constitutes an ongoing physical record of the way his general opinions about the lay of the land are shaped by his experience.

5. No claim is made about the psychological reality of these maps, or the form in which they are neurally represented. The claim is only that, for the purposes of understanding the relationship between our theories and the individual perceptual episodes which at once provide evidence for them and locate us thereon, they are best so conceived.

6. It is indifferent, for our purposes, whether we speak of properties of space or properties of the matter it contains; to every property Q of a thing, there corresponds the property of the space it inhabits of containing a Q-thing.

internal relation between two parts of the larger map, and these kinds of internal relations are easy enough to understand. The thing is more difficult when the representation in question is a theory or map of the physical world *as a whole* (including the part which represents us representing and the relation between our representations and what they represent) and the world they are maps of. How these get interpreted, i.e., how we single out one of the myriad mappings between the two as the intended one, is a much more difficult (and notoriously vexed) question. It will not do to say that we hold the world in one hand and a map in the other, and hook bits of the two up with one another by pointing at them simultaneously. For one thing, we can only 'point at' bits of the world in our immediate spatiotemporal neighborhoods (our access to the rest, if we have access to it, is mediated by representations, and hence dependent on the very relations between these and the world that the interpretation sets up). For another thing, pointing is a linguistic act, as much in need of interpretation as any other.

These points are important and correct, but not devastating. The first is dealt with by acknowledging that our maps are nailed directly only to parts of the world we can identify without *using* any representations, and (if we let 'ostension' be our name for identification without employment of representations) this will mean that we can only refer *directly* to parts of the world that can be ostended, and *indirectly* only to those uniquely related to these.⁷ With respect to the second, we should acknowledge the ambiguity of ostensive identifications in *theory* (there is nothing in my pointing which tells you that I mean to be calling attention to the bit of the world the finger is pointing toward, the bit of space 2 kilometers due north of it, or the finger itself), but appreciate that it works well and widely enough in *practice* to win us a stock of terms that refer determinately to at least publicly observable bits of the world in our perceptual environments. Pointing always, unless otherwise indicated, directs our attention to the object pointed to at the time of pointing. That, it seems to me, is just common sense, a fact about us; it is the way we instinctively and unreflectively respond to pointings. Something similar is true of ostensive identifications of properties.⁸

Here is another piece of common sense; an uninterpreted map is useless for navigational purposes. If I cannot associate points on my map with parts of the landscape and symbols or markings with types of terrain, and if I cannot identify the place on the map which stands

7. I am using 'parts' neutrally to refer to properties as well as particulars.

8. I will say something about this below, but see Ismael 1999 for a fuller discussion. Notice that if tacit invocation of a sortal is essential to the success of ostension of particulars, then ostension of properties is the more basic case.

for my location, I cannot use it as a guide to the structure of the space of possibilities through which I am always, as an agent in the world, charting my course. Interpreting the map of possibility space embodied in our physical theories is a matter of associating volumes of that space with properties that can be ostensively identified; that is to say, it is a matter of associating physical with phenomenal properties.⁹

Once we set up this way of thinking, it is a short step to see the relation between a phenomenal property (e.g., experiencing a salty taste) and its physical basis (having a high level of activation in my salty receptor) on the model of the relation between an ostensively identified spot in physical space (e.g., *here* or three feet due north of *here*) and its coordinates on an ordinary map (e.g., $\langle c, b \rangle$). But before I continue, I want to say something about the association of phenomenal properties with ostensive identification.

2.4. Ostensive Identification of Properties. It may be that many English words are ambiguous between types of experience and physical properties of perceptual objects which characteristically (i.e., actually and under standard conditions) cause them. It may be that 'red', for instance, is ambiguous between

(I) the set of experiences whose this and other-worldly members are united by qualitative similarity, and

(II) the set of things whose this-worldly members are picked out by their qualitative features (i.e., characteristic causal relations to types of experience) but whose otherworldly members are related to these by sameness of physical type or some other non-qualitative relation.¹⁰

It is not important to settle this here; when I want to use a term as a name for a phenomenal property (i.e., in the sense given by (I)), I will subscript it with a *p*.

That physical properties can be identified with volumes of possibility

9. There is an oft-remarked complication which can be confusing, but does not effect the discussion: types of experience may be (and typically are) picked out by causal relations to public objects (e.g., the taste of cantaloupe or the smell of burning toast, read, respectively read as "*dthat*(the taste of cantaloupe)" and "*dthat*(the smell of burning toast)"); they are, that is, rigidified descriptions picking out sets of experiences united by intrinsic similarity.

10. The difference emerges when we try to say which otherworldly objects are red, whether they include objects with the same microphysical surface structure as actual red things, regardless of the types of experience they cause (in counterparts of us; though it is not obvious what makes one or another otherworldly population, once we allow variations in experience of perceptual objects, our counterparts), or only those which cause experiences intrinsically similar to our red experiences.

space is clear, for possibility space just *is* the space obtained by recombination from physical properties. That ostensive identifiability is the distinguishing feature of phenomenal properties is less so, but not hard to see if you think about how properties are identified when no representations are *used* in the identification, how, for instance, before we are in a position to give verbal definitions, we teach children and foreigners how to apply a new predicate by pointing out positive instances and foils and counting on a shared sense of what counts as *going on in the same way* in sorting new cases. The success of the procedure (and I take it for granted that it often *is* successful) depends on tacit appeal to a metric, a shared sense of which of the two sets any fresh candidate is ‘closer to’. In the most basic case (the case in which we are trying to bring others *into* our language from outside or working up a common language from scratch), the relevant metric must be appealed to *tacitly* because there is no way of expressly invoking it. We can only sort objects and hope that our cohorts will manage to emulate our classificatory activity without needing to be *told* what counts as emulation, without needing to be provided—implicitly or explicitly—with a criterion for membership in either class. That is a familiar story.

Once we can verbally identify some non-qualitative relation *R*, we can introduce predicates whose instances are united in *R*-ing ostended bits of stuff (we can say, for instance, “Let ‘water’ refer to stuff physically similar to *this*,” or—if you fancy a more metaphysical account—“Let ‘water’ refer to stuff that participates in the same universal as, or belongs to the same natural class as, *this*”), but such definitions essentially involve *representation* of *R*, and so do not count as genuinely ostensive identifications, in the sense that I mean. Genuinely ostensive identifications are those that employ no representations at all, and the metric which determines the objects of such ostensions, the one we tacitly rely on when we try to ‘point at’ a property by just pointing at instances of it, is phenomenal similarity.¹¹ Genuinely ostensive identification of properties (and we could never work up a common language unless we could genuinely ostensively identify *some* properties) depends on joint apprehension of the phenomenal relations between experiences of perceived items, and a shared instinct to rely on these in extending the application of a predicate in the absence of explicit instructions to the contrary.

It is worth remarking that ostensive identifiability, is my stand-in for the old Russellian notion of Acquaintance. It does the same work in picking out the bits of the world which are grasped without the mediation of representations, but has none of the epistemological bag-

11. See Ismael 1999.

gage of Russell's idea (e.g., the insistence that we are completely and infallibly knowledgeable about its objects). For, to ostend a part of the world one need not know anything about it; as a matter of fact, one must only be appropriately related to it. It is the *actual, external* relation between oneself and what one points at—regardless of what one knows, or thinks one knows, regardless, that is, of anything 'in one's head'—that makes *it*, rather than any other thing, the object of one's ostension.

So here, in a nutshell, is how to think of the relations between physical and phenomenal properties: the former are picked out by their actual causal relations to the latter and assigned names from the language of the physical theory which give their coordinates, so to speak, in possibility space. The fact that such and such a physical property represents *this* rather than *that* phenomenal one is a fact about the *interpretation* of the maps of possibility space contained in our physical theories; it has the same status as the claim that the coordinates \langle , \rangle on my map of the locale stands for *here* rather than *there*, and follows from stipulations about how the map is interpreted. This means that all true statements of the form 'phenomenal property P = physical property P*' are knowable a priori, but it does not mean that they must be obvious, any more than it must be obvious to someone who holds a map of a city in her hand, which of its streets she is on. This is so even if she is fully apprised of the stipulations that interpret the map, for these are not usually given point by point; if a few well-chosen identifications suffice to nail down the whole, they are all that are explicitly made and determining where others fall could take some complicated figuring.

3. Part II. Arguments against the identification of phenomenal and physical properties fall into roughly two classes. There are those that point to apparently possible worlds in which physical and phenomenal properties come apart: arguments from the conceivability of zombies, unembodied minds, and inverted spectra fall into this class.¹² And there are those which point to apparent differences in our epistemic relations to physical and phenomenal properties; Jackson's argument, Chalmers's knowledge asymmetry argument, and (perhaps) Kripke's argument at the end of *Naming and Necessity* fall into this one.¹³ There

12. Chalmers also has an argument that he calls the Argument from the Absence of Analysis that plausibly falls into this class, but it is neither convincing nor influential and I will ignore it.

13. I say 'perhaps' because Kripke's argument is a couple of moves farther down the move tree; it is an argument against one way of explaining away the apparent existence of worlds in which physical and phenomenal properties come apart, and is quite closely

are interesting differences between the various versions of each of the argument types, but I will explicitly take up just one representative of each: from the first class, the argument from the possibility of zombies, because it is the one of these that has received the most attention in the literature,¹⁴ and, from the second class, Jackson's argument, because it is the most interesting and the most instructive.

3.1. Jackson's Argument. First, Jackson's argument. Mary, a normally sighted neuroscientist of the highest caliber specializing in the neurophysiology of color vision, is brought up in a room containing only black and white objects (and, perhaps, those in various shades of grey). She has never spied a tomato or a fire engine, never glimpsed a daffodil or a dandelion, but, we are told, she knows everything about the physics of optical processes: she knows how the microphysical structure of a surface determines the wavelength of light it will reflect, how this information affects the rods and cones in the retinas of appropriately placed perceivers, and how it gets filtered and transformed along the route from there to the brain. What Mary does not know, since she has, as it happens, never had light of the right wavelength hit her retinas, is *what it is like* to see red or yellow. Mary, we are asked to admit, learns something when the first tomato is brought into her room, something she did not know beforehand, but, Jackson argues, since she knew all of the physical facts before she saw the tomato, what she learns cannot be among them. "The point," writes Chalmers presenting Jackson's argument,

is that the knowledge [of what it is like to see red] does not follow from the physical knowledge alone. Knowledge of all of the physical facts will in principle allow Mary to derive all the facts about a system's reactions, abilities, and cognitive capacities; but she will still be entirely in the dark about its experience of red. (Chalmers 1996, 103)

Here is my response: just as there is something I learn when I learn that the point labeled $\langle c, b \rangle$ on my map represents this very corner table at Cafe Barrone, and it is something that no amount of staring at the map (or, for that matter, the relevant bit of space itself) will tell me,

related to arguments in the second class because, like them, it draws on difference in our *epistemic* relations to physical and phenomenal properties.

14. The others either do not add anything or introduce complications that it is not useful to go into. The argument from inverted spectra is weaker because you can admit that the phenomenal properties vary across worlds that are physically identical without allowing that physical things could *have* no phenomenal properties.

there *is* something Mary learns when she sees a red thing for the first time, something that no amount of poring over her textbooks and journals (or, for that matter, looking at red things) will tell her. But it is *not*—and this is the crucial point—something that impugns the completeness of her physical theory; it is not an omission that could be redressed by any *addition* thereto. What Mary learns when she learns that *this* is what it is like to see red is an external relation between the world and her representation of it, a consequence of interpretive conventions established by its makers and adopted by its users. Just as one can have a map as accurate and detailed as you please and still be utterly lost (i.e., just as one can know where one is in the sense of being able to point at the spot, hold in one's hand an accurate map of the very terrain, know that it is such, and still not be able to locate herself thereupon) one can have a physical theory, as complete and accurate as you please, and still be phenomenally ignorant, still not know how to recognize an instance of any physical kind *as such* on the basis of its phenomenal properties. It is not, in either case, because the representation (the theory or the map) is incomplete, but because the relevant bit of knowledge is knowledge about an *external relation between the two*, not the kind of thing that *could* be had by looking at either individually.

3.2. *Zombies*. As for zombies: there are, as I said, some types of physical event which are such that there is something it is like (for me) for them to occur, namely, the c-fiber firing, taste receptor activations, eardrum vibrating, and the like, that go on in my body. There is a different set of physical events on which you have a 'direct line': the c-fiber firings, taste receptor activations, eardrum vibratings, and the like, that go on in your body. I am, that is to say, *conscious of* (some of) the states of my body and you are conscious of (some of) the states of yours, the events of which we are respectively conscious are not the same, and there are countless events of which neither of us are conscious (e.g., the c-fiber firings that go on in Clinton's body¹⁵), the motion of the cogs inside the clock on my mantle, and the death of a fish in the deep, dark sea).¹⁶ Zombies are, by hypothesis, bodies that are

15. Clinton's claim to feel our pain notwithstanding.

16. It is important to understand what is meant by this: it is not that I am not aware of things that go on outside my body (or that the objects of the states of which I am conscious are things outside myself): when I am (in the state of) seeing a dog in front of me, what I am aware of is the dog; the object of the state is the dog, and its content is that he is in front of me. It is rather that there is only one body such that there is something it is like *to me* when it is in one or another kind of state; there is only one body such that there is something it is like for *me* when *it* is in the kind of brain state

intrinsically (viz., physically) just like yours and mine but of whose states *no one* is conscious (i.e., for whose states there is nothing it is like for anybody to be in them).¹⁷ If we conceive of the relation *being-conscious-of* as I have been suggesting on the model of *being-at*, i.e., as a genuinely external relation between subjects of experience and sets of physical events, then there is nothing worrisome in this. Just as we can imagine unoccupied bits of space (places that are not *here* for anyone) without impugning the identification of here with $\langle c, b \rangle$, we can imagine c-fiber firings, taste receptor activations, and eardrum vibrations that noone is conscious of (events that are not *like* anything for anyone) without impugning the identification of *my* pains with the c-fiber firings in my body. Here is simply the place that I happen to be at, and my pains are nothing more than the c-fiber firings of which I happen to be conscious.

4. Part III. Let me approach this from a slightly different direction. Almost all of the arguments against the identification of pain and c-fiber firing (including the ones I mentioned, but did not discuss, in the last section) take their departures from one or more of the following facts about their relationship:¹⁸

- I cannot be mistaken about being in pain, but I *can* be (positively or negatively) mistaken about whether my c-fibers are firing (i.e., I can think my c-fibers are firing when they are not, or think they are not when they are).
- It is always an open question, when I am in pain, whether or not my c-fibers are firing, and vice versa.
- Knowing that I am in pain does not settle the question of whether my c-fibers are firing, and knowing that my c-fibers are firing does not settle the question of whether I am in pain.

that results from visual interaction with an appropriately placed canine. There is *not* something it is like for me, in general, for any particular chunk of space to be dog-occupied, nor something it is like for me when any other body is in the seeing-a-dog state. It is my body, and only my body, some of whose states there is in general something it is like for me when they obtain.

17. It does not seem so obviously wrong to me to say that there are pains and tickles in such bodies that noone is conscious of, in the same way that I might say there are pains and tickles in my own body when I am asleep or under aesthetic that I do not feel. But there is pressure (and I feel it too) to insist that an event is not a pain unless *someone* is conscious of it, but this only means pains are c-fiber firings of which someone is conscious, and does not do any more to establish property dualism than the cleaner view that there is pain wherever there is c-fiber firing.

18. I will not worry about whether these are independent of one another; there is overlap, certainly, but it does not matter.

We can say precisely the same things about the relationship between *here* and $\langle c, b \rangle$ (where, again, these are the coordinates my map assigns this spot), but we are not tempted to deny that *being-here* and *being-at- $\langle c, b \rangle$* are one and the same property, we are not tempted to deny that when I say “I am here” I say anything other than that I am at $\langle c, b \rangle$.

- I cannot be mistaken about being *here* (i.e., I always know where *here* is in the sense that I can point at the spot) but I can be (positively or negatively) mistaken about being at $\langle c, b \rangle$ (i.e., I can think I am at $\langle c, b \rangle$ and not be, or be at $\langle c, b \rangle$ and think I am not).
- It is always an open question, given that I am *here*, whether or not I am at $\langle c, b \rangle$, and vice versa.
- Knowing that I am *here* does not settle the question of whether I am at $\langle c, b \rangle$, and knowing that I am at $\langle c, b \rangle$ does not settle whether I am *here*.

I have been suggesting that the analogy between the *here-ness* of this corner table at *Cafe Barrone* and the phenomenal character (the ‘ouchness’, if you like) of the firing of my c-fibers is deep. *Here* is not a special private place that only I can be, distinct from, but momentarily tied to, $\langle \cdot, \cdot \rangle$. Nor is *here-ness* an intrinsic *property* of any spot, for different locations are here for different people: this corner table is here for me, the ground under your feet is here for you, his seat on Mount Olympus is here for Zeus, and so on. Despite its misleading grammar, we conceive of *here-ness* as a *relation*, one that each of us bears to the spot at which we are (respectively) located.¹⁹ We should think, likewise, of the feel of the knife as it enters my skin, or the taste that fills my mouth when I place a pinch of salt on my tongue, not as first-order properties of mine, distinct, respectively, from the having firing c-fibers or the having of a particular pattern of activation in my taste receptors, but tied to these so that they always (or, mostly, under standard conditions) accompany them. Nor should we think of them as second-order properties of individuals, so that having a characteristic phenomenal feel is a property of the *property* of having firing c-fibers, and experiencing a salty taste is a property of the *property* of having a high level of activation in the salty receptor on my tongue. We should think of the phenomenal character of an event—whether there is something *it is like* for it to occur and *what* it is like—as an external relation it may bear one or another of us. There is *something it is like to me* for there to be c-fiber firing going on *here*, something it is like to *you* for

19. In the philosophical terminology, it is an external relation, for it fails to supervene on the intrinsic properties of its relata.

c-fiber firing to be happening over *there*, and not something it is like for *anyone* for there to be c-fiber firing in a zombie's head, gases forming in the center of the earth, or a tree falling in an empty forest. Just as *here* is neither an intrinsic property of the spot I am at, nor a special location distinct from all of those which make up our public space, but an ordinary place to which I bear a distinguished relation (that of *being-at*), the pain I feel as the knife enters my flesh is not a property of my firing c-fibers nor a private occurrence distinct from those that make up our public world, but an ordinary physical event to which *I* bear a special relation. What the analogy suggests is that we should think of *having-(one or another)-phenomenal-feel* as relations that each of us bear a different set of physical events in the same way that *is-at* is a relation that each of us bears a different spot; indeed, insofar as we conceive of ourselves as differently placed occupants of a single commonly experienced world, that is how we *must* think of them.²⁰ My body is the hunk of matter my unmediated apprehension to some of whose states makes *it* my window on the world. You, of course, have a different body, you are *conscious of* certain of its states, states that *my* access to is somewhat less direct (mediated by my conscious states in the same way that your access to mine is mediated by yours). That is the suggestion.

It is, first and foremost, a reaction against the position that Chalmers calls property dualism. For my part, it stems from the conviction that it is a misunderstanding of the nature of the *physical* to think that it could be independent of the phenomenal. Virtually all contemporary discussions focus on the phenomenal side of proposed physical-phenomenal property identifications and base the case for mutual independence on the apparent autonomy of the phenomenal (Kripke's and Jackson's are the most obvious examples), but if we understand the role that experience plays in the construction and employment of our physical theories (and recall that this includes our representations of the world, quite generally), I do not see how we can avoid the conclusion that it is no less a part of our conception of *physical* properties that they are constitutive of the phenomenal than it is part of our conception of other locations (locations I am not now at) that they are spatially related to *here* (i.e., that they lie some distance from *this* spot). To put the point the other way around, it is no less a part of our conception of phenomenal properties that they are connected in the

20. To say that a relation is external is just to say that it does not supervene on the intrinsic properties of its relata; it is to say that events which no one is *conscious of* differ no more intrinsically from those which are felt, than places that no one is *at* differ intrinsically from those which are occupied.

space of physical properties than it is a part of our conception of *here* that it is connected in physical space. But this is a relatively idiosyncratic motivation; more often, opposition to a Chalmers-style view stems from reductionist aspirations, and it is worthwhile saying something about whether a view like this satisfies them.

4.1. Is Being-Conscious-of a Physical Relation? The question is delicate; suppose that neurobiologists succeed in uncovering the physical basis of consciousness, suppose that they find that *s* is conscious of *c* just in case *c* is F_b .²¹ And suppose that they get so sophisticated that they can tell what *kind* of tactual, auditory, olfactory . . . experience a conscious subject has from the physical state of her brain, so that an accomplished neurobiologist looking an MRI image of my brain can tell me what sounds, tastes, and smells I am experiencing in the way that an experienced navigator given the coordinate description of my location will know where to find me.²² What the neurobiologist ‘discovers’ when she discovers the neurobiological description of a particular phenomenal state, is like what a navigator ‘discovers’ when he learns the coordinate description of the home where he was raised, or a secret spot on a beloved hill. What she learns, that is, is a new description of a deeply familiar locale, a description that can be especially useful for navigational purposes because it encodes the relations of the state to all others (under their physical descriptions). And what she discovers when she discovers the physical basis of consciousness (i.e., when she discovers what F_b in the above condition is), is what all of these states have in common; she discovers the physical description of the relation I bear my conscious states, you bear yours, and so on.²³

Now, if what it is for a relation *R* to be a physical relation is for it to be *represented* on our maps of the physical world, then *being-*

21. *s*, here, is a subject of experience [you, me, or one of our mates], *c* is a physical event, and F_b is some condition that may or may not be satisfied by a given *c* (e.g., activates the consciousness cell in the brain of body *b*). Differences in the set of events of which subjects are conscious arise because of differences in the *b*'s that go into the specification of F , differences in the bodies of whose F -states they are variously conscious (mine is the one of whose F -states I am conscious, yours is the one of whose F -states you are conscious, and so on). What makes *this* one mine and *that* one yours is not something intrinsic to either of our bodies, not something that can be found in their physical description. It is a fact about what they represent, a fact about the relations they bear to things outside themselves.

22. He will know, that is, how to get from where he is to where I am. He will know something about the actual relations between two parts of real space, his location and mine.

23. There is, of course, no guarantee that the relationship is, in physical terms, a simple one.

conscious-of is a physical relation; it is represented by $F_b(s,c)$. If, on the other hand, what it is for R to be a physical relation is for full knowledge of the internal structure of those maps to be sufficient for knowledge of which events we variously R, then they are *not*, because—as Jackson’s argument brought out—full discursive knowledge of our physical theories is not sufficient for knowledge of which events [under their physical descriptions] have a phenomenal character (for me) and what that character *is*. The analogy with *being-at* is helpful again; if what it is for R to be a physical relation is for it to be represented on our maps of the physical world, *being-at* is a physical relation, (the one I bear to the bit of space occupied by my body). If, on the other hand, what it is for R to be a physical relation is for full knowledge of the internal structure of those maps to be sufficient for knowledge of which events we variously R, then it is *not*, because nothing on the map, i.e., nothing in the represented relations between bodies and locations, will tell me where I am, which location is here and which body is mine. The physical description of the being-conscious-of relation does not announce itself as such any more than the coordinate description of *here* announces *itself* as such.

To belabor the point just a little bit more: it is a misunderstanding of the nature of the physical to expect something in the physical description of a body to tell me whether it is *mine* or something in the physical description of its c-fibers will tell me *what it is like* (for me) when they fire. Our theories are representations of the world and those are facts about their interpretation: trying to read the latter off of the former is as hopeless as trying to identify the point on a map that stands for *here* by staring at the map. The map can be as accurate and richly detailed as you please, nothing *internal* to it is going to tell you about the external relations it bears to the space it represents.²⁴ What makes this so hard to see clearly is that the map itself, the landscape it represents, and the relations between the two, are themselves *parts* of the represented landscape. Once I locate the point on the map that represents *this* place, I will find there a representation of myself, map in hand, pointing simultaneously at a part of the map and the spot be-

24. Putnam taught the same lesson in a different way (though this is probably not how he would have put it); languages have internal structure, and when bits of language are mapped onto bits of the physical world, ways of arranging the former can provide maps (we call them, in this special case, ‘descriptions’) of the latter (this is not yet a full-blown picture theory of language; it can, but does not have to be, spelled out *à la* the *Tractatus*). Nothing internal to such a description—be it ever so accurate and complete—will tell us what part of the physical world any bit of language stands for, what individual is named by this term, what things that predicate applies to, and what fact this sentence describes.

neath my feet. If the map is a linguistic one (i.e., if it is a *description* of the world), it will include a set of sentences describing external relations between parts of the world and bits of language which, collectively, give its interpretation; sentences like “‘cat’ refers to cats,” “‘snow is white is true’ iff snow is white,” and so on. Neither of these, however, will help us in our pre-interpretation phase; *no* representation of the interpretation will tell us what that interpretation is unless we know how to read (i.e., interpret) the representation, and this is just what we do not know when the representation occurs on the very map we are trying to interpret. Unless I know which symbols stand for people and maps, how pointing is represented, and where *here* is, I might be looking right at it, but I will not be able to identify the symbol which represents me. And until I know what quotation marks and ‘refers to’ mean, and what parts of the world the terms on the right hand side of ‘refers to’ stand for, sentences like “‘cat’ refers to cats” will not help me decide whether *this* is a cat.

The point is simple, but, again, obscured by the fact that the we, our representations, and the relationship between ourselves and our representations are all *parts* of the represented landscape. It is this familiar and wondrous Gödelian structure that is so confusing, that leads us to expect to find external relations between us and our representations ***on*** those representations, that leads us to expect to find external relations *between* the two of us ***on*** the one.

4.2. *The Limits of Physical Reductionism.* To know where I am in the physical world is to know which body is mine; it is to locate the hunk of matter my immediate access to (some of) whose states makes it my window on the world: through whose eyes I see it, through whose skin I feel it, through whose ears I hear it, and through whose nose and mouth I taste and smell it.²⁵ But it is mistaken, and altogether misleading, to think that each of us is *given* the physical picture of the world and faces the problem of determining *therefrom* which of the portrayed bodies is our own, and what phenomenal character is had by portrayed events (i.e., what, if anything, it is like [for me] for c-fiber firing to be going on *here* or combustion to be going on *there*).²⁶ If that were our problem, we would have no solution, and—as Strawson remarked somewhere—in cases like these it is only because the solution exists that the problem arises at all.

25. To locate it, that is, on the map, to determine its position relative to all other bodies.

26. To put this in a more familiar way: it is a mistake, and altogether misleading, to think that we are given an impersonal picture of the world and have the problem of constructing our personal perspectives *therefrom*.

It works, instead, something roughly like this: our own experience presents bodies essentially in relation (spatial and otherwise) to ourselves, and each of us go about plotting these relations and working up a personal map that we use to steer. These personal maps are diverse but (it turns out) related in a systematic way: with some fixing up and filling in, they can be obtained from one another by transformations of a simple sort, and we obtain an impersonal or un-‘centered’ representation by taking what is invariant under all of these transformations. The result is a map that is portable across our individual perspectives, a great deal more detailed and comprehensive than anything we could have worked up individually, and from which the manifold centered maps that each of us use to steer by can be obtained by supplementation with a bit of idiosyncratic information, namely, which body is our *own* and what (if anything) it is like [for us] to be in one or another of its states.²⁷

These impersonal maps just *are* our representations of the physical world, and the bits of idiosyncratic information with which they have to be supplemented to retrieve the relevant personal maps (the *my*-ness of my body and the phenomenal character of particular events), cannot be included on them, or incorporated into them, without spoiling their impersonality, i.e., without destroying their portability from one to the other of our perspectives. If that is what reductionism aspires to, if what it would be to ‘find a place for the consciousness in the physical world’ is to weave the *here*-ness of the spot *I* am at and the *ouch*-ness of *my* pains into our *physical* maps, then it is utterly misguided, for if what I have been saying is even roughly correct, the physical is *essentially* impersonal.²⁸

27. As I remarked, which body is mine, and which events *have* a phenomenal character are not unrelated. What that phenomenal character is, however, is not determined by knowing which body is mine.

28. There is a large and well-known body of literature that makes a connection between indexicals and phenomenal properties, conceived as the ‘subjective features of experience’, but it is mostly concerned with the semantics of statements, or the contents of thoughts, involving the two. See, e.g., Geach 1957, Castaneda 1966, Boer and Lycan 1986. The connection between the Geach-Castaneda issue and Nagel’s knowledge argument is made in Boer and Lycan 1980, McGinn 1983, and more explicitly in McMullen 1985. McMullen argues that what unites the two issues is that in each case an indexically expressed thought can be understood fully only by someone occupying the right perspective, and that the right reaction is to distinguish descriptive psychological associations from semantic value, and suggests that ‘understanding’ involves the former as well as the latter. McMullen, McGinn, and Boer and Lycan all hold that ‘subjective’, perspectival, indexical states of subjects are a matter of combining a represented, ‘objective’ state of affairs with a special mode of representation, which cannot (normally) be used by another subject to represent the very same state of affairs; and Lycan (1990) argues that the nature of the represented state of affairs is independent

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of the various modes in which it is presented, bringing his position close to the one suggested here. I would like to thank an anonymous reviewer for *Philosophy of Science*, for bringing the article to my attention. The emphasis is different, but I find much of what Lycan says congenial.