

Bats, Brain Scientists, and the Limitations of Introspection

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Thomas Nagel and Frank Jackson have advanced influential arguments designed to foil any materialist attempt to account for the mental.¹ These so-called knowledge arguments assume that if materialism is true, someone who possesses complete physical knowledge will know every fact about mental states there is to know. Thus, because there are facts about mental states that will not be known by someone who possesses complete physical knowledge but has never enjoyed certain experiences, it follows that materialist accounts of the mental are inadequate. In response, defenders of materialism have generated counterarguments of several kinds. In my view, no materialist strategy has so far been successful, but nonetheless, further development will vindicate one of them.

Early resistance to the knowledge arguments aimed to show that what distinguishes a subject who has had certain sensory experiences from someone who is physically omniscient but has never had them is not factual knowledge, but merely an ability, such as an ability to imagine,

¹ Thomas Nagel, "What is it Like to Be a Bat?", The Philosophical Review 83 (1974), pp. 435-50; Frank Jackson, "Epiphenomenal Qualia," Philosophical Quarterly 32 (1980), pp. 127-136, "What Mary Didn't Know," The Journal of Philosophy 83 (1986), pp. 291-295.

recognize, or remember,² or an ability to apply a concept,³ and that hence, there is no fact about mental states that eludes a materialist account. The decisive issue for this first strategy is whether having an ability of the sort in question nevertheless involves possessing factual knowledge about certain phenomenal features of mental states, factual knowledge lacked by the physically omniscient subject who has not had the sensory experiences. One might argue, for example, that if one has the ability to imagine sensing red one must also have factual knowledge of what it is like to sense red, and someone who has complete physical knowledge but does not know what it is like to sense red will not only lack the ability, but the factual knowledge as well. Advocates of the first strategy dispute such claims, but to my mind, it is unclear that Nagel and Jackson have been answered.⁴

² Laurence Nemirow, "Review of Thomas Nagel, Mortal Questions," Philosophical Review 89 (1980), pp. 473-477, "Physicalism and the Cognitive Role of Acquaintance," in Mind and Cognition, William G. Lycan, ed., (Oxford: Blackwell, 1990), pp. 490-499; David Lewis, "Postscript to 'Mad Pain and Martian Pain'," Philosophical Papers, vol. 1, (New York: Oxford University Press, 1983), "What Experience Teaches," in Mind and Cognition, pp. 499-519; Patricia Kitcher, "Phenomenal Qualities," American Philosophical Quarterly 16 (1979), pp. 123-129.

³ Janet Levin, "Could Love Be Like a Heatwave? Physicalism and the Subjective Character of Experience," Philosophical Studies 49 (1986), pp. 245-261.

⁴ See for example, Levin, "Could Love Be Like a Heatwave?" especially sections IV and (continued...)

A second strategy, developed by Paul Churchland, Brian Loar, and William Lycan, among others, concedes that the special knowledge that certain sensory experiences provide might well be factual knowledge, but it insists that all of the facts known by means of these experiences will also be known by someone who has complete physical knowledge but has never had the experiences at issue. Complete physical knowledge, all by itself, fails to supply only modes of presentation of facts, not knowledge of these facts themselves.⁵ I contend that the advocates of

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V, and Lewis, "What Experience Teaches," p. 517.

⁵ Paul M. Churchland, "Reduction, Qualia and the Direct Introspection of Brain States," Journal of Philosophy 82 (1985), pp. 8-28; Brian Loar, "Phenomenal States," Philosophical Perspectives 4: Action Theory and Philosophy of Mind, ed. James Tomberlin, (Atascadero, CA: Ridgeview Publishing Company, 1990), pp. 81-108, see pp. 85-88 for criticisms of the ability strategy; W. G. Lycan, "What is the "Subjectivity" of the Mental?" Philosophical Perspectives 4, pp. 109-130; Robert Van Gulick, "Physicalism and the Subjectivity of the Mental," Philosophical Topics 13, pp. 51-70, and "Understanding the Phenomenal Mind," in Consciousness, Martin Davies and Glyn W. Humphreys, eds., (Oxford: Blackwell, 1993); see also Terence Horgan, "Jackson on Physical Information and Qualia," Philosophical Quarterly 32 (1984), pp. 147-152, and Michael Tye, "The Subjective Qualities of Experience," Mind 95 (1986), pp. 1-17. By Van Gulick's classification in "Understanding the Phenomenal Mind," Horgan, Churchland, and Tye hold that someone who has complete physical knowledge but has not had certain experiences lacks no propositional knowledge, while Loar, Lycan, and Van
(continued...)

this second strategy have so far merely displaced the problem that Nagel and Jackson raise, but that this strategy can be enhanced to resolve the controversy in favor of the materialist. Furthermore, I argue that this reinforced mode-of-presentation strategy exposes a fundamental mistake in the knowledge arguments: they presuppose, falsely, that if materialism is true, then complete physical knowledge will provide cognitive access to everything about a subject's mental states as they are apprehended in introspection.⁶

I

Nagel's argument in "What is it Like to be a Bat?," in its most powerful form, proceeds as follows. Suppose a chiropterologist knows everything that there is to know about the physical constitution and organization of a bat, but knows nothing else about it. His physical knowledge

⁵(...continued)

Gulick maintain that she does, and what explains this difference is that these last three theorists individuate propositions more finely than do the first three (pp. 141-2). All of these philosophers, however, share the view that she does not lack knowledge of any properties, which I characterize as the view that she lacks no factual knowledge.

⁶ A third strategy, developed by Daniel Dennett in "Quining Qualia," Mind and Cognition, Lycan, ed., pp. 519-547, attempts to answer the anti-materialist by eliminating the qualitative features of experience. For a critique of Dennett's view, see William Seager, "The Elimination of Experience," Philosophy and Phenomenological Research 53 (1993), pp. 345-365.

should not be conceived as limited to knowledge within the science of physics, but rather as exhaustive factual knowledge of every entity (object, event, state, property, aspect) that is wholly physically realized, whether it be physical, chemical, neurophysiological, or psychological.⁷ But even if the chiropterologist has all of this physical knowledge, he will not know certain subjective facts about the bat's conscious experience. He will lack knowledge, in particular, of what it is like to have some of the sensory states of a bat. For example, he will not know what it is like to have echolocation sensations. Therefore, the physical constitution and organization of this organism are insufficient to account for its conscious experience, and there is something about the bat's mental life that is not completely physical, or equivalently, not wholly physically realized.

In Jackson's version of the knowledge argument, Mary has lived her entire life in one

⁷ In this formulation, wholly physically realized means completely constituted from entities over which (an ideal) physics quantifies. Thus, as I conceive the argument, it aims at any sort of materialism, whether reductive or nonreductive (cf. Derk Pereboom and Hilary Kornblith, "The Metaphysics of Irreducibility," Philosophical Studies 63 (1991), pp. 125-145). In his article, Nagel presents the argument as directed against any sort of reductionism, but since he includes functionalism in his list of reductionisms, his quarry might well not have been restricted to type-type physicalism. Moreover, in The View From Nowhere, (Oxford: Oxford University Press, 1986), Nagel indicates that his target includes all forms of physicalism (pp. 13-17). Furthermore, there is no feature of this type of argument that would make it less effective against nonreductive materialism than against physicalist reductionism (cf. note 22).

room.⁸ This room displays only various shades of black, white, and grey. She acquires information about the world outside, and also about the physical nature of the human being, by means of a black and white television monitor. By watching television programs Mary eventually comes to have all of the physical knowledge there is to have about the nature of the human being, and again this complete physical knowledge should be conceived as exhaustive factual knowledge of every entity that is wholly physically realized.⁹ But, the argument goes, even if she knows all of this, there is much she does not know about human experience. She does not know, for example, what it is like to experience a ripe red tomato, and in particular, she lacks knowledge of what it is like to sense red. When she leaves the room and sees a ripe red tomato, she learns something about human sensations. Consequently, there is information about human sensations

⁸ Jackson, "Epiphenomenal Qualia" and "What Mary Didn't Know."

⁹ In "What Mary Didn't Know" Jackson characterizes complete physical knowledge by means of a list, as knowledge including "everything in completed physics, chemistry, and neurophysiology, and all there is to know about the causal and relational facts consequent upon all this, including of course functional roles" (p. 291). The problem with this formulation is that fails to explain why the list contains the items it does, and no others. My characterization of complete physical knowledge, that it is exhaustive factual knowledge of every entity that is wholly physically realized, avoids this difficulty, since it explains why an item might be counted as physical knowledge.

that is not physical information, and thus human sensations are not completely physical.¹⁰

Schematically,

(i) Mary (while in the room) knows everything physical there is to know about human beings.

(ii) Mary (while in the room) does not know everything there is to know about the nature of human sensations and their properties.

¹⁰ In "Epiphenomenal Qualia" Jackson focusses his argument against physicalism, and he defines physicalism as the view that "all (correct) information is physical information" (p. 127). Hence, as Torin Alter points out (in correspondence), one might regard this argument as directed against a thesis about information, and not against a thesis about ontology, and thus one might consider it to be aimed at dislodging not the view that everything is wholly physically realized, but only the claim that all information is physical information. But in "What Mary Didn't Know" Jackson characterizes physicalism in ontological terms: "Physicalism is not the noncontroversial thesis that the actual world is largely physical, but the challenging thesis that it is entirely physical" (p. 291). I conclude that Jackson assumes the informational and the ontological theses to be logically equivalent, and I interpret his argument accordingly. Furthermore, if one defines physical information as information about entities that are wholly physically realized, (then on one natural understanding) the two theses are indeed logically equivalent. (For) if there is an entity that is not wholly physically realized then there will be corresponding non-physical information, and if there is non-physical information there will be a corresponding entity that is not wholly physically realized.

Therefore,

- (c) There is information about human sensations that is not physical, and thus human sensations are not completely physical.

The core intuition underlying the knowledge arguments is that if someone who possesses complete physical knowledge does not thereby know some fact about mental states, then that fact cannot be physical. Given this assumption, materialism would seem to be refuted if complete physical knowledge of a conscious organism does not, all by itself, yield knowledge of what it is like to have (some of) the mental states of that organism. Thus one might note that the deeper structure of a knowledge argument does not require that it make reference to facts about peculiar creatures or circumstances. On a proper understanding of this structure, it should be sufficient for refuting materialism to point out that complete physical knowledge of one's own nature, all by itself, would not provide knowledge of what it is like to have (some of) the sensations one has, even though one actually knows what it is like to have those sensations. Hence, a knowledge argument need not, strictly speaking, adduce unusual creatures such as bats or odd circumstances in which someone lacks sensations most of us have, although such embellishments might well contribute a degree of rhetorical force.¹¹

One feature that is indispensable for the knowledge arguments is their supposition of the

¹¹ Consequently, one cannot undermine Nagel's argument simply by showing that we humans can come to know what it is like to have echolocation sensations. Rather, one would have to establish that from knowledge of physical or intersubjectively accessible entities alone we can come to know what having such sensations is like.

following accessibility principle:

(A) If materialism is true, then one will have cognitive access to everything about a subject's mental states, as they are apprehended in introspection, solely in virtue of having complete physical knowledge.

An essential characteristic of Nagel's and Jackson's arguments is the supposition that if materialism is true, complete physical knowledge will provide cognitive access to everything about a subject's mental states as they appear to introspection. Eventually, I shall attempt to show why we have insufficient reason to endorse this accessibility principle.

II

One might first, however, raise a worry earlier on in the argument. What reason, one might ask, do we have for believing that while Mary is in the room she has all the physical knowledge there is to have about the human being, given that she has never experienced color sensations? Perhaps introspective knowledge of color sensations is required in order to have complete physical knowledge about them. Jackson seems to be making an assumption about what counts as complete physical knowledge which allows him to claim that Mary has complete physical knowledge of the human being even though she lacks introspective knowledge of color sensations, and this assumption calls for a justification.

A view that would account for Jackson's assumption is that the concept of the physical contains the notion of intersubjective accessibility, or as Herbert Feigl argues, that intersubjective

accessibility is a necessary condition of the physical.¹² Thus one might claim that part of the concept of a physical entity is that its existence and nature can be known either directly through observations that any being with a reasonably powerful sensory apparatus could make, or indirectly through inference from such observations alone. Accordingly, while in the room Mary would have complete physical knowledge of the human being even though she lacks introspective knowledge of color sensations, because she has knowledge of every intersubjectively accessible feature of the human being. Whether color sensations are intersubjectively accessible is in doubt, because it would seem that their nature could not be known directly on the basis of observations that someone with very different kinds of sense organs from ours could make, nor be known indirectly by inference from such observations. Knowledge of color sensations, by the very concept of the physical, would initially appear not to be knowledge that is entirely physical.

But accepting this conception of the physical would not result in the knowledge argument begging the question against the materialist by having it simply presuppose that color sensations are not intersubjectively accessible and therefore not physical. Despite initial appearances, it would still be epistemically possible, at least before we have worked our way through the argument, that complete knowledge of color sensations be acquired from observations that any being with a reasonably powerful sensory apparatus could make, or by inference from such

¹² Herbert Feigl, The 'Mental' and the 'Physical,' (Minneapolis: University of Minnesota Press, 1967), pp. 66-68, discussed in Nemirow, "Physicalism and the Cognitive Role of Acquaintance," pp. 491-492; cf. Nagel, "What is It Like To Be a Bat?", The View From Nowhere, pp. 13-17, and Lycan, p. 109.

observations. If this possibility were actually realized, Mary's complete knowledge of intersubjectively accessible features of the human being would include all the knowledge of color sensations that can be gained through introspection. Color sensations would then be thoroughly intersubjectively accessible after all.

However, the claim that intersubjective accessibility is part of the concept of, or is a necessary condition for the physical is a legacy of positivist anti-realism. Realists, it would seem, must allow for the possibility that there are aspects of the physical that defy the intersubjective method that we have developed to come to know it. But not all is lost. Realists will affirm that when something is represented but is not intersubjectively accessible we have good evidence that it is mind-dependent.¹³ And given that included in our concept of something physical is that it is mind-independent, when something is represented but is not intersubjectively accessible (in the respect we just outlined) we have good evidence that it is not physical.

Consequently, although while in the room Mary has knowledge of every intersubjectively accessible feature of the human being, it will not strictly follow that she has complete physical knowledge of the human being. But Mary's having all of this knowledge still may provide good evidence that she has complete physical knowledge of the human being. This weaker link between intersubjective accessibility and the physical may well approach what Nagel has in mind.¹⁴ And although, given these conclusions, a successful knowledge argument would not guarantee the

¹³ Derk Pereboom, "Mathematical Expressibility, Perceptual Relativity, and Secondary Qualities," Studies in History and Philosophy of Science 22 (1991), pp. 63-88.

¹⁴ Nagel, "What is It Like To Be a Bat?" and The View From Nowhere, pp. 13-17.

falsity of materialism, establishing the unlikelihood of materialism would yet be a significant accomplishment.¹⁵

III

In recent articles, William Lycan¹⁶ and Brian Loar¹⁷ argue that someone who has complete physical knowledge but has not had certain experiences does not lack knowledge of some fact about the nature of mental states, but is merely missing some mode of presentation or concept.

Human beings, Lycan points out, have representations of their own psychological states, and

if a subject S hosts such a representation, no one else can use a syntactically similar representation to represent the very first-order state-token (of S's own) that is the object of S's own representation; other people may be able to form syntactically similar representations, but the object of those representations will be first-order states of their

¹⁵ One might note that although something's not being intersubjectively accessible provides good evidence that it is not physical, we nevertheless cannot conclude from something's being intersubjectively accessible that it is physical. This is because it seems possible that there should be non-physical entities which are intersubjectively accessible. The implication this point has for Jackson's argument is that if Mary does know everything about color sensations in virtue of her complete knowledge of intersubjectively accessible entities, we cannot thereby conclude that color sensations are physical.

¹⁶ Lycan, "What is the "Subjectivity" of the Mental?".

¹⁷ Loar, "Phenomenal States."

own hosts, not any states of \underline{S} 's.¹⁸

According to Lycan, the difference between the bat's and the scientist's representation of sonar sensation is akin to the difference between my use of 'I' and your use of 'you' to represent me. Even if you know that I weigh 180 pounds, you cannot represent this fact by 'I weigh 180 pounds,' whereas I can represent this fact by means of that sentence. But I do not have knowledge of some fact of which you lack knowledge. The only fact to be known here is that I weigh 180 pounds, and we both know it. By analogy, Lycan argues, the scientist and the bat know the same facts about the bat's mental states, only by different kinds of mode of presentation.

In Lycan's view, a bat experiencing echolocation sensations is in a functional state of a type distinct from that of the observing scientist, and this circumstance gives rise to their different kinds of mode of presentation. "No one else [than this particular bat], human, bat, or bat human, could know the same facts by being in the same functional state."¹⁹ The unique functional situation of the introspecting subject, Lycan believes, "naturally creates the illusion of an ontologically special kind of state of affairs." Accordingly, introspective modes of presentation are inferior to their scientific counterparts; "the inner 'feel' that is a representation's functional role has little relation to the object that is the representation's extension."

The central feature of Loar's account is a distinction between "physical-functional concepts" and "phenomenal-recognitional concepts." These diverse types of concepts introduce distinct sorts of modes of presentations of states. But these distinct sorts of mode of presentation

¹⁸ Lycan, p. 120.

¹⁹ Lycan, p. 124.

need not pick out different aspects of states. The claim that distinct sorts of mode of presentation must pick out different kinds of mental item would seem to presuppose the discredited resemblance theory of representation: "It is as though anti-physicalist intuitions rest on a resemblance theory of mental representation, as though we conclude from the lack of resemblance in our physical-functional and phenomenal conceptions a lack of sameness in the properties they refer to."²⁰ In Loar's view, then, the what-it-is-like aspect of an introspective perception is associated with a phenomenal-recognitional concept, a concept which facilitates the recognition of a physical property, but does not resemble that property.

Let us first consider a quibble one might raise against the mode-of-presentation strategy (the ingredients of an answer to this quibble are touched on by both Lycan and Loar). It seems plausible that phenomenal modes of presentation are states or aspects of states with content sufficient to account for our representing sensations as having certain characteristics which are different from those that physical-functional modes of presentation represent sensations as having. In particular, phenomenal modes of presentation represent sensations as having a phenomenal character which is not intersubjectively accessible in the way that complete physical realization would strongly suggest, while physical-functional modes of presentation do not represent sensations as having such a character. This fact is perhaps obscured by the analogy with indexicals. When I represent the fact that I weigh 180 pounds by 'I weigh 180 pounds' and you represent this fact by 'You weigh 180 pounds' these distinct types of representation do not represent me as having different characteristics. Let us therefore provide the anti-materialist with

²⁰ Loar, p. 90.

the strongest possible case, and suppose that phenomenal modes of presentation represent some mental states as having a character which is not intersubjectively accessible.

There is a convincing response to this quibble. Supposing that phenomenal modes of presentation do represent mental states as having a character which is not intersubjectively accessible in the way that complete physical realization would strongly suggest, these mental states still might not actually be as they appear to introspection. We might draw an analogy between our introspective awareness of mental states and our sensations of external objects. Because our sensory awareness of external objects is mediated by representations caused by those objects, the possibility arises that there is a discrepancy between the way external objects appear to the senses and the way they really are. Familiarly, many agree that the secondary qualities of external objects -- their colors, tastes, and sounds -- are not as they appear in sensation. When I visually perceive the leaves of the maple tree, my sensation of red fails to represent some quality of the leaves as it really is. One might analyze this disparity between appearance and reality along Lockean lines, by suggesting that in the case of secondary quality representation, their content fails to resemble the represented quality.²¹

Similarly, it is plausible that our introspective awareness is also mediated by representations caused by the mental states they represent. Consequently, the possibility also

²¹ John Locke, Essay Concerning Human Understanding, Peter Nidditch, ed., (Oxford: Oxford University Press, 1975), II, viii; cf. Pereboom, "Mathematical Expressibility, Perceptual Relativity, and Secondary Qualities."

arises that mental states are not as they appear to introspection, as Kant argued.²² For example, according to the Lycan/Loar account, one aspect of my introspective awareness of a sensation of red is a phenomenal mode of presentation -- what it is like to sense red. Given that my introspective awareness is mediated by representations, my sensation of red might not actually be just as this mode of presentation represents it. This sensation might really be intersubjectively accessible in the way that complete physical realization would strongly suggest, even if to introspection it appears to have a character that is not intersubjectively accessible in this way.

Thus even if phenomenal modes of presentation, such as what it is like to sense red, represent sensations as having a character that is not intersubjectively accessible, a modified reply to the knowledge arguments along Lycan/Loar lines is effective. For since mental states might well not be as they appear to introspection, sensations might yet be thoroughly intersubjectively accessible and wholly physically realized. This possible disparity between appearance and reality might also be analyzed in the Lockean manner. Perhaps it is plausible to say that the content of an introspective representation might fail to resemble the mental state it represents.

IV

The Lycan/Loar account, however, suffers from a more significant problem. In Loar's view, before Mary's emergence from the room, she has knowledge of the real nature of the mental state sensing red in virtue of her complete physical knowledge. When she emerges from the room

²² Immanuel Kant, Critique of Pure Reason, tr. Norman Kemp Smith, (New York: St. Martin's Press, 1965), B152-9.

and sees a ripe red tomato, by introspective awareness of her sensation of red she acquires a phenomenal mode of presentation of sensing red for the first time. Mary does not thereby come to know a fact about sensing red she did not previously know. Suppose that all of this is true. But let us now focus our attention not on sensing red, and on what Mary can know about it, but rather on the state that she is in when she introspects her state sensing red. If materialism is true, exhaustive factual knowledge of this further state, a state which features the typical human phenomenal mode of presentation of sensing red -- what it is like to sense red -- will be had by someone who has complete physical knowledge but has never enjoyed a sensation of red. But, the anti-materialist should object, it will not be. Just by having complete physical knowledge one will not know, for example, that

(1) The mental state that features the typical human phenomenal mode of presentation of sensing red has this property.

where 'this' refers to what it is like to sense red.

This objection captures all of the original force of Nagel's and Jackson's arguments. In Lycan's and Loar's analyses, the what-it-is-like aspect is assigned to a mode of presentation of the sensation, and not to the sensation itself. According to Nagel's initial contention, it is precisely this aspect that resists a materialist account. If the what-it-is-like aspect is assigned away from the sensation to a mode of presentation, then the crucial issue becomes whether a state that features this mode of presentation has a materialist account. Thus, part of the force of our objection is that the problem for materialism that its opponents have raised has not been addressed, but merely displaced.

But given the way we managed the quibble raised earlier against the mode-of-presentation

strategy, we are now in a position to deal with this more significant problem. We have said that just as the secondary quality, redness, might not be as it appears in sensation, so sensing red might not be as it appears to introspection. In particular, a state featuring the phenomenal mode of presentation what it is like to sense red might not represent sensing red as it really is. But we can now ascend a level. Not implausibly, our introspective access to mental states featuring phenomenal modes of presentation is also mediated by representations caused by these states. Consequently, the possibility arises that mental states featuring such modes of presentation are not as they appear. Hence, the mental state featuring the mode of presentation what it is like to sense red might be intersubjectively accessible in the way that complete physical realization would strongly suggest, even if to introspection it appears to have a character that is not intersubjectively accessible in this way, and it might in fact be wholly physically realized.

Moreover, one can make the same point for any further iteration of introspective perceptions of states featuring phenomenal modes of presentation. Any mental state, no matter how high it is in the hierarchy of introspections of introspections, might be thoroughly intersubjectively accessible and wholly physically realized, despite the way we represent it in introspection. Jackson's argument thus fails to show that Mary does not have exhaustive factual knowledge of the real nature of mental states that feature phenomenal modes of presentation of color sensations, and furthermore, no version of the knowledge argument can demonstrate that someone who is physically omniscient might yet lack factual knowledge of the real nature of any mental state.²³

²³ The mode-of-presentation strategy also provides an effective response to a knowledge
(continued...)

Perhaps there is something odd about the claim that there might be a distinction between appearance and reality even for our apprehension of phenomenal modes of presentation. In Consciousness Explained Daniel Dennett disputes this type of claim, which he attributes to a view he calls the image of the Cartesian Theater:

The Cartesian Theater may be a comforting image because it preserves the reality/appearance distinction at the heart of human subjectivity, but as well as being scientifically unmotivated, this is metaphysically dubious, because it creates the bizarre category of the objectively subjective -- the way things actually, objectively seem to you even if they don't seem to seem that way to you! (Smullyan (1981)) Some thinkers have their faces set so hard against "verificationism" and "operationalism" that they want to deny it even in the one arena where it makes manifest good sense: the realm of subjectivity.²⁴

But it is not odd to say that there is a difference between the real nature of how something seems

²³(...continued)
argument directed solely against reductionist materialism, for despite the way mental states appear to introspection, they might still be intersubjectively accessible and fully described by an ideal physics or an ideal neurophysiology, at least for all a knowledge argument can show.

²⁴ Daniel Dennett, Consciousness Explained, (Boston: Little, Brown, and Company, 1991), p. 132. The work by R. M. Smullyan Dennett cites is "An Epistemological Nightmare," in The Mind's I: Fantasies and Reflections on Self and Soul, D. R. Hofstadter and Daniel Dennett, eds., (New York: Basic Books, 1981), pp. 415-427.

to you and how it seems to seem to you. For this to be so there need only be a difference between the real nature of a mental state of something's seeming a certain way to you and how that state appears to you in introspection. However a mental state seems to you in introspection, that state might not have the characteristics it appears to have, and in fact it might be intersubjectively accessible in the way that complete physical realization would strongly suggest, even though it appears to have a character that is not intersubjectively accessible in this way.

But furthermore, the anti-materialist might argue that one must have direct apprehension of one's representations -- apprehension that is not mediated by additional representations which can give rise to an appearance/reality distinction -- for otherwise a vicious infinite regress would be generated. If I did not have such direct apprehension of my representations, my apprehension of the redness of the tomato would be mediated by a (sensory) representation, but so would my apprehension of this representation of redness, and so would my apprehension of the representation of this representation of redness, ad infinitum. So if one apprehended a representation, one would have to have an infinite series of representations of representations, which is absurd. The best way to stop the regress is to admit apprehension of one's representations that is not mediated by any additional representations. Thus when I perceive a tomato, one should suppose that my introspective apprehension of my sensation of its redness is direct in this way, and consequently, that this sensation is just as it appears in introspection. The materialist must account for the nature of this sensation, and if it is not cognitively accessible as it is apprehended in introspection by someone who has complete physical knowledge but lacks certain experiences, then an aspect of the mental lacks a materialist account.

But there is no vicious regress here. One must make a distinction between having a

representation of something and apprehending that representation. One can have a representation without in turn apprehending that representation, and moreover, having a representation can be causally efficacious even when that representation is not apprehended. Consider an example conceived by David Armstrong.²⁵ Suppose that you have been driving a car for a long time, and you are on "automatic pilot." In this situation, you are aware of the road -- otherwise your car would be in the ditch. But you are not aware of your awareness of the road. Perhaps, under more usual driving circumstances, you would be aware of your awareness, but now you are not. You might now choose to "snap out of it," and to become aware of your awareness, but this would be a separate mental act, which you might or might not perform. Hence, your having a representation of the road is distinct from, and does not entail, your apprehending that representation. And thus no regress is generated by the supposition that one lacks direct, unmediated apprehension of one's representations, since having a representation does not entail that one also apprehends that representation.

A further objection to my view is fueled by the intuition that one could not have a sensation with a first-person phenomenal mode of presentation of a different type from the one it actually has.²⁶ One's sensation of red, introspectively presented in the way sensations of red typically are, could not be presented from the first-person point of view in the way that a sensation of blue typically is. If a sensation appeared to the first-person point of view as a sensation of blue

²⁵ David Armstrong, "The Nature of Mental States," in Readings in the Philosophy of Psychology, vol. 1, Ned Block, ed., (Cambridge: Harvard University Press, 1980), pp. 191-9.

²⁶ Torin Alter makes this objection (in correspondence).

typically does, then it could not be a sensation of red; it would have to be a sensation of blue. But since by this intuition a sensation and a first-person mode of presentation cannot be separated, it would seem to support the claim that sensations are identical with first-person modes of presentation. It would follow, in turn, that there is no distinction between the real nature of a sensation and how it is presented from the introspective point of view, and that there is no possibility that first-person modes of presentation of sensations fail to represent sensations as they really are.

There are several replies to this objection that preserve the distinction my view requires between sensations and their first-person modes of presentation. The first is that although we may naturally believe that a sensation could not have a first-person mode of presentation of a different type from the one it actually has, this belief is mistaken. Analogously, we might have the natural belief that something could not be gold unless it were presented in the familiar sensory way, but we know that this belief is in error. A second response is that causal laws are such that any token of a particular type of sensation can directly cause first-person modes of presentation only of one particular type. Consequently, we can account for the intuition that a sensation could not have a first-person mode of presentation of a different type while maintaining that sensations and their first-person modes of presentation are distinct in the way my view demands.

One might resist the first response because of the strength of the intuition at issue, and the second because one holds that even if the causal laws were different, a sensation still could not have a first-person mode of presentation of a different type from the one it actually has. I am not convinced by these rejoinders, but a third response accommodates them. Since our access to sensations is typically by our first-person modes of presentation, and since these modes of

presentation play an important role in the causal relations sensations have, types of sensations are individuated by such first-person modes of presentation. Accordingly, sensations of red are, by definition, whatever sensations are presented by such-and-such a first-person mode, where this mode is the way sensations of red appear to introspection. Thus, by the very definition of a sensation-type, it would be logically and not merely causally impossible for it to have a first-person mode of presentation of a different type from the one it actually has. Yet on this conception the distinction required for my view between sensations and their first-person modes of presentation can be preserved. This conception can sustain first-person modes of presentation of sensations that might not represent those sensations as they really are.²⁷

According to our challenge to the Lycan/Loar version of the mode-of-presentation strategy, Mary cannot know that

- (1) The mental state that features the typical human phenomenal mode of presentation of sensing red has this property.

where 'this' demonstrates what it is like to sense red. Now we can see that it has not been shown

²⁷ Defining a sensation relative to a mode of presentation might seem to compromise its physicality, supposing that included in the concept of a physical thing is that its nature and existence is independent of how it is apprehended. However, the third proposal does not define a sensation by how it is apprehended by way of a mode of presentation, or by how it appears in virtue of a mode of presentation, but simply by the mode of presentation that presents it. One might note that the knowledge argument fails to discredit the independence of modes of presentation of how they are apprehended.

that Mary will not know this fact. The demonstrated property is indeed represented introspectively in a way in which someone who has complete physical knowledge but has never had a sensation of red does not have access to it, but this does not show that such a knower does not have access to its real nature. And furthermore, the same type of point applies to any further iteration of introspective perceptions. Hence, the mode-of-presentation strategy can survive the challenge we raised for Lycan's and Loar's development of this approach.

V

Let us return to the accessibility principle, the truth of which is presupposed by the various versions of the knowledge argument:

(A) If materialism is true, then one will have cognitive access to everything about a subject's mental states, as they are apprehended in introspection, solely in virtue of having complete physical knowledge.

The considerations just advanced enable us to see that we have insufficient reason to embrace this principle. Mental states, including states featuring phenomenal modes of presentation, might well not be as they appear to introspection. Consequently, there is insufficient reason to suppose that for materialism to be true, physical omniscience must provide cognitive access to mental states as they appear to introspection. The core intuition underlying the knowledge arguments is that if someone who possesses complete physical knowledge does not thereby know some fact about mental states, then that fact cannot be physical. But if what this physically omniscient subject will fail to grasp is a mental state as it is apprehended by means of a mode of presentation that might well not represent the state as it really is, then we cannot conclude that some aspect of the real

nature of that state escapes the materialist's net.

We can, however, formulate a more plausible accessibility principle:

(B) If materialism is true, then one will have cognitive access to everything about the real nature of a subject's mental states solely in virtue of having complete physical knowledge.

Nevertheless, the arguments of Jackson and Nagel fail to show that Mary and the chiropterologist will not have complete knowledge of the real nature of their respective subjects' mental states. Mary does not have cognitive access to everything about these states as they are apprehended in introspection, but again, one cannot therefore presume that she lacks knowledge of their real nature. Even if Mary does not have cognitive access to everything about a mental state that features some phenomenal mode of presentation as that state is apprehended in introspection, one cannot conclude that she fails to have complete knowledge of the real nature of that state. Perhaps some version of the arguments of Nagel and Jackson would succeed if it could be shown that, at some point in the hierarchy of introspective perceptions, introspected states are as they appear. But despite Dennett's verificationism and Descartes' aspirations for introspection, we have no reason to believe this ever happens.²⁸

²⁸ This paper has benefitted from discussions with Torin Alter, Lynne Rudder Baker, David Christensen, Philip Clark, Hilary Kornblith, Arthur Kuflik, Don Loeb, William G. Lycan, and William Mann.