While reductive materialist theories of mind are susceptible to devastating objections, it seems one cannot outright deny some sort of genuine connection between "the mind" and the brain. It is a fact that neurophysiology has enjoyed significant empirical success; testimony to this fact can be seen, for instance, in the pharmaceutical industry, where drugs which affect the chemistry of the brain can be used to alleviate numerous mental disorders. Nevertheless, in this essay I will argue that the materialist thesis is problematic, particularly at the linguistic level. I will then propose a model which salvages some of the significant empirical insights provided by neurophysiology, yet avoids the linguistic confusion of materialism proper by drastically curtailing the neurophysiologist’s role in understanding and explaining "the mind".

Materialism and Reduction

"Whenever a new science achieves its first big successes, its enthusiastic acolytes always fancy that all questions are now soluble by extension of its methods of solving its questions" (Ryle 76). On this model, the neurophysiologists claim that questions about the mental states and events of humans and other obviously conscious animals can be reduced to questions about states and events of the brain and nervous system. This scientific stance finds its philosophical counterpart in a cluster of views known broadly as "reductive materialism" (which I shall simply call "materialism"). According to materialists, what we call "the mental" is either identical with, or entirely determined by, the physical. Typically, "physical" is meant to refer to the brain and nervous system,
although many materialists believe that the mental can also be realized by certain non-biological physical systems (for instance, AI theorists hold that a sufficiently complex system of silicon chips implementing a sufficiently complex computer program can be said to have "mental" properties and capabilities). In any case, the materialists "wish to deny the existence of any irreducible mental phenomena in the world" (Searle 27). Thus, both the neurophysiologists and the materialists propose an explanatory reduction: the mental can be explained solely in terms of the neurophysiological because the mental is nothing over and above the neurophysiological; every "mental" state or event is reducible to some neurophysiological correlate.

I characterize these views as "reductive" whether or not they deny the existence of mental phenomena such as, most significantly, consciousness. The existence of mental phenomena can be denied by such theories (Churchlandian eliminative materialism being the most explicit and extreme example), but it need not be. Materialists can hold that there are such things as consciousness, imagination, beliefs, desires, sensations, etc. However, the materialist position is reductive in that for every mental particular, there is some neurophysiological particular that is identical with, causes, or otherwise wholly determines the nature of its corresponding mental particular. To give a complete neurophysiological story of a human being is to give a complete "mental" story of that human being. The neurophysiologist's "aim is to explain what thinking, perceiving, etc. are by reference to the 'thinking' or 'interpreting', 'inferring' or 'hypothesizing', allegedly engaged in by the brain and its parts (Hacker 149)...." Hence, there is an explanatory reduction (of the mental to the neurophysiological).

Linguistic Objections

In Philosophical Investigations, Wittgenstein makes the following point: "[O]nly of a living human being and what resembles (behaves like) a living human being can one say: it
has sensations; it sees; is blind; hears; is deaf; is conscious or conscious (Wittgenstein 97).” This list could be extended to include all of the vocabulary which refers to the mental, including thinking, believing, desiring, remembering, the various moods and emotions, etc.; all these words refer to mental states and events. According to Wittgenstein, these words are predicatable only of human beings because we use these words to refer to what human beings do, viz., perceive, think, believe, etc1: “[T]he criteria for the application of such [words] consist in behaviour patterns in specific contexts against a background of widely ramifying complex capacities manifest in behaviour (Hacker 147).” We attribute the various mental (viz., psychological) properties to persons (to adopt Strawson’s terminology) because only a person could manifest the contextually situated behaviour which constitutes the criteria for attributing said properties.

The materialist claims that the psychological properties of a person are entirely dependent upon, and thus can be explained solely in reference to, that person’s neurophysiological properties; the neurophysiological explanation is said to be “basic”. But this entails that the various psychological predicates must be ascribed to physiological mechanisms, since they and nothing else are invoked in the explanation of the psychological property. The materialist is thus bound to speak of brains thinking, imagining, being in pain, seeing (in conjunction with the eyes), etc. At this point, the materialist’s explanation has become nonsensical. It makes no sense to think of a brain exhibiting the criteria by which we apply psychological predicates. A brain cannot cry out in pain, express a belief, argue for an hypothesis, watch a sunset, or read a book. This is not due to the obvious fact that a brain has neither a vocal nor a visual apparatus; to the extent that the brain is cited as the causal origin of all these activities, it can be said to be what is acting, and hence is the bearer of the psychological predicates. Yet it is these criteria alone which enable us to say of a person that she feels pain, believes, thinks, sees, or understands written language. Since only persons themselves can exhibit the criteria for ascribing
psychological predicates, they must be presupposed in any story of the psychological. The neurophysiological explanation, which talks on one hand about brains and on the other about psychological attributes which these brains presumably manifest in various biochemical states and events, is not merely incomplete; it is incoherent.

I have used scarce quotes when speaking about "the mind" because there is a tendency to suppose that in denying that one can attribute psychological predicates to neurophysiological mechanisms, one is thereby committed to attributing them to "the mind". Immediately one is confronted with the ontologically dubious entity made famous by Descartes; indeed, it is the very absurdity of the notion of a thinking, immaterial substance somehow inverting in and animating a body which provides much of the impetus for the more scientifically acceptable materialist explanation. Denying materialism does not mean one must speak in terms of "minds" in any more than a metaphorical sense; one can simply talk about human beings or persons, entities which cannot present any serious ontological uncertainty. Once persons have been posited, one can simply proceed to attribute them psychological predicates of perceiving, believing, etc., based simply on the fact that these are things that persons (not their brains or "minds") do.

Brains Matter

Nevertheless, the materialist will insist that it is undeniable that persons require brains. This, of course, is true. Remove the brain from a person's head, and you no longer have a living person; you are left with a corpse. But the linguistic objection outlined above denies none of this; it is a grammatical objection, not an empirical one. In his exegesis of Wittgenstein's Investigations, Hacker explains what this means:

[W]e know what [psychological] verbs mean only in so far as we have mastered their existing use, which
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does not license applying them to the body or its parts, save derivatively... [A] lthough neurological complexity (crudely speaking) is empirically requisite for possession of perceptual, volitional, and cognitive faculties, the kinds of features... that underlie, and constitute criteria for such faculties and their exercise to a [person] are quite different from this. (Hacker 148,162)

These criteria are what persons, not brains, do and say. But just as it does not follow from accepting this that one must "deny that there is a mental process", it also does not follow that one must posit "an unbridgeable gulf between consciousness and brain-process" (Wittgenstein 102,124).

The neuroscientist proposes an explanation which combines the terms, and hence the rules of use, from the "person-story" and the "brain-story". This combination "produces a conflict of rules and hence incoherence in the neuroscientists' use of these terms" (Hacker 148-9). Hacker emphasizes that the neuroscientist erroneously uses these terms, not that there is anything wrong with these terms per se. Accordingly he admits that the use of neurophysiological terminology in explanations of psychological predicates could be a coherent possibility, though not on the present model of such explanations:

If neurophysiologists... or philosophers wish to change existing grammar, to introduce new ways of speaking, they may do so; but their new stipulations must be explained and conditions of application laid down. (Hacker 148)

I have no intention of introducing any "new ways of speaking", but I would like now to introduce and develop a grammatical distinction which, I shall argue, picks up on the ontological connection between the psychological and the neurophysiological, a connection which all non-Cartesians (Wittgenstein and Hacker included) seem willing to admit exists at some level. The details of this grammatical distinc-
tion constitute the stipulations by which this ontological connection can be explained. Although this might presently sound like an attempt to vindicate the materialist position, I am quite sure that those philosophers and scientists who enthusiastically endorse neurophysiological explanation will be less than satisfied with my conclusions.

Transitive and Intransitive Consciousness

Consciousness, according to Searle, "is the central mental notion" (Searle 84). Furthermore, he argues that the subjective, qualitative character of consciousness cannot, even in principle, be accounted for by a purely objective neurophysiological explanation. Searle is certainly correct in emphasizing the importance of consciousness; any account which cannot explain consciousness is grossly incomplete. I shall assume for now that materialists do not wish to deny the existence of consciousness, but believe (if falsely) that an ideal neurophysiological explanation will be able to account for consciousness.

There are two relevant senses of the word "consciousness". Norman Malcolm provides a general picture of this distinction:

There is a grammatical difference between two uses of the word 'conscious'. In one use this word requires an object: one is said to be conscious of something, or to be conscious that so-and-so.... There is another use of the word 'conscious' in which it does not take an object. If we think that a person who was knocked unconscious has regained consciousness, we can say, 'He is conscious', without needing to add an 'of' or a 'that'. (Armstrong & Malcolm 3)

Consciousness with an object is called "transitive consciousness", while the more generic sense of consciousness, in which one either is or is not conscious or "awake", regardless of what one is conscious of or that, is called "intransitive consciousness".
Although the general idea should be obvious, there is clearly more to be said about this distinction. It is particularly helpful to note that there are numerous sorts of transitive consciousness. I can be transitively conscious of, for instance, stones, cats, the weather, and countless other things in the physical world, via the senses; I can see a stone or smell a cat, and by doing so I am conscious of the stone or the cat (or perhaps the cat's smell; the distinction is irrelevant here). I can be conscious of myself or bits of myself; when I am in pain because I have burnt my finger, I am conscious of my finger in a particularly unpleasant (viz., painful) way.

Further types of transitive consciousness can be understood by using different prepositions. In these cases, the object of the preposition will be identical with the object of consciousness. Thus, when thirsty (which perhaps involves, among other things, consciousness of one's dry mouth), one can have a desire for a glass of water. One can be attentive to what a pontificating orator is saying; and one might be angry at, or perhaps even in love with, the orator. In all these cases, one is in one way or another conscious of something or someone, i.e., transitively conscious.

Malcolm suggests that whatever we can be conscious of, we can also be conscious that; for instance, I can be conscious of someone playing the piano, and also conscious that someone is playing the piano. These may seem like the same thing, but there is "a difference between a concept-free mental state (e.g., an experience) and a concept-charged mental state (e.g., a belief)" (Dretske 263). In the above example, then, consciousness of someone playing the piano is, say, seeing a person sitting at the piano and hearing certain sounds emanating from the instrument. Consciousness that someone is a playing the piano, on the other hand, is a belief which necessarily involves certain concepts, viz., concepts of pianos, music, and persons. An animal which lacks these concepts cannot be conceptually conscious that a piano is being played, but it can be conscious of the piano being played (i.e., it can hear it).
Dretske characterizes this distinction as one between consciousness of facts and consciousness of things, but I think that the more general and relevant distinction is between conceptual and non-conceptual consciousness, and that the word *that* best captures the nature of the more conceptual forms of consciousness. Thus one can be said to believe (veridically or not) *that* Santa Claus exists; remember *that* one has to take the garbage out, or understand *that* "chat" means "cat" in French. Whatever the status of the distinction between consciousness of and consciousness *that*, it is clear that both are types of transitive consciousness, viz., consciousness with an object.

Intransitive consciousness seems to be a far less complex notion than transitive consciousness; it is consciousness "*tout court*", not consciousness of or *that* anything (Armstrong & Malcolm 3). Intransitive consciousness is consciousness without an object. I think it is best thought of as a necessary "background" for transitive consciousness. That is, one must be intransitively conscious, in the sense of being "*awake*", in order to be transitively conscious. Intransitive consciousness can be better understood by examining a misconstrual of what it is. Armstrong says, "Suppose it is true to say of somebody that he is seeing a horse. Normally at least, this is an intransitive idiom" (Armstrong 117). Not at all. One *sees a horse*; here we clearly have a type of consciousness (seeing) which has an object (a horse), and hence is a form of transitive consciousness. I am uncertain why Armstrong would say this, given that he later claims (correctly) that "there is no intransitive perception"; presumably "He saw a horse" as an idiom suggests a type of intransitive consciousness, but how it does so is entirely unclear (Armstrong 117).

Transitive consciousness presupposes intransitive consciousness, in the sense that to be able to say of a person that she perceives her surroundings, has sensations, expresses beliefs, etc., presupposes her "*being awake*". Intransitive consciousness is not, however, a mere static state; there are degrees of intransitive consciousness, as Searle illustrates:
If during sleep I have dreams, I become conscious, though dream forms of consciousness in general are of a much lower level of intensity and vividness than ordinary waking consciousness. Consciousness can vary in degree even during our waking hours, as for example when we move from being wide awake and alert to sleepy or drowsy, or simply bored and inattentive. Some people introduce chemical substances into their brains for the purpose of producing altered states of consciousness, but even without chemical assistance, it is possible in ordinary life to distinguish different degrees and forms of consciousness. (Searle 83)

The types of consciousness Searle is describing in the above passage can all be understood as intransitive; they do not take objects. One cannot be awake of or that anything, no matter how alert, attentive, drowsy, or distracted one may be in that particular state of "awakeness". By affecting the brain with alcohol, one cannot be said to be drunk of or that an object, fact, etc. Nevertheless, intransitive consciousness (of whatever sort) is a necessary condition of transitive consciousness; it is the requisite "background" for the more seeing, hearing, feeling emotions, thinking, and all the other interesting things that persons do.

Consciousness and Materialism

The empirical findings so lauded by materialism seems to provide an asymmetrical understanding of these two types of consciousness, with intransitive consciousness enjoying the more thorough explanation. According to the materialist, the fact that everything can be explained physically means that everything can be explained causally, viz., in terms of causal physical laws. Our sense of intransitive consciousness as a background state fits the causal model quite well. To be "awake" in the most basic sense, one requires a properly functioning, oxygenated brain in a comparatively normal biochemical state. Modifications of this biochemical state
produce different types of intransitive consciousness. For instance, a brain which is being affected by the chemicals found in tranquilizers will produce a "lower level" of intransitive consciousness (i.e., will cause a person to be drowsy); on the other hand, a brain being flooded by endorphins causes an intransitive state of consciousness characterized by an overall sense of elation (though one is not, in this sense, elated of or that anything). Different general "moods" as different types of intransitive consciousness, such as being ecstatic or depressed (though, to distinguish moods from emotions (which are types of transitive consciousness), not ecstatic or depressed of or that anything), seem quite amenable to causal explanation:

Moods are pervasive, they are rather simple, especially because they have no essential intentionality, and it looks like there ought even to be a biochemical account of some moods. We already have drugs that are used to alleviate clinical depression. (Searle 140-1)

A neurophysiological (i.e., physical) explanation of the various types of intransitive consciousness seems to be a genuine possibility, because intransitive consciousness seems to be a largely (I will not say entirely) causal notion; one is caused to be alert, drunk, or depressed because one's brain is well-rested, permeated by alcohol, or in some state of chemical imbalance. Indeed, neurophysiologists have been able to explain a great deal in this domain.

Transitive consciousness, on the other hand, has not been nearly as well explained by neurophysiology.8 Explanations of remembering, believing, and other such cognitive types of consciousness seem particularly impoverished; in particular, explanations of how the content of particular memories and thoughts is "stored" in particular parts of the brain is highly theoretical at best. Explanations of perception fare a bit better, but still seem insufficient to account for such things such as the Gestalt structure of perception in purely neurophysiological terms. Neuroscientists readily acknowledge
the high level of theoriticity in many of their explanations, and, for some types of consciousness, the lack of any reasonably complete or concrete explanation. However, they tend to dismiss these problems by invoking a future when, as a result of continued successful empirical research, all such difficulties will allegedly disappear.

Transitive consciousness is characterized by its having an object. It is consciousness of or that something, which is to say that it is consciousness directed towards an object. Hence, transitive consciousness involves an intentional relation to its object. These intentional relations cannot be reduced to causal relations, simply because they are two fundamentally different sorts of relations; the essence of intentionality is its “directedness” or “aboutness”, while this element is not present in causality. Therefore, transitive consciousness is not explainable on the neurophysiologist’s model of an entirely causal, physical system. Any appeal to future empirical discoveries about the brain is futile, because these will only be discoveries of causal events and relations in the brain; intentionality, however, is not reducible to causality.

Consciousness and Language

Even if empirical discoveries allowed the neuroscientist to establish some definite level of psycho-physical parallelism in cases of transitive consciousness, it does not follow that one can give a reductive explanation of psychological predicates. The linguistic points made above still hold: Persons are the bearers of psychological predicates, and it is what persons do that constitutes the criteria for ascribing these predicates; hence, an explanation of the psychological must be based in language about persons and what they do, no matter how much is known about brains and what they do. It is clearly the case that persons bear the psychological predicates which correspond to the various types of transitive consciousness. Persons see, feel and understand; brains do not. Furthermore, it is the actions of persons that serve as criteria for attributing the various types of transitive con-
We say that someone believes that such-and-such is the case because that person verbally affirms the belief, acts in accordance with it, etc.; to explain that someone believes something because his brain carries some sort of chemical code presupposes that we have used the regular criteria of what he says and does to determine that he does, in fact, believe such-and-such.

Intransitive consciousness might seem to be exempt from this point if, as I have suggested, it can largely be understood in terms of a causal, neurophysiological explanation. However, it is still persons, not their brains, who are said to be awake, asleep, elated, depressed, inebriated, etc.; persons are the bearers of the psychological predicates which correspond to the various types of intransitive consciousness. Even though intransitive consciousness can largely be explained in neurophysiological/biochemical terms, such an explanation is secondary to an explanation in terms of the persons to whom the predicates of intransitive consciousness are ascribed. Empirical knowledge of a certain aspect of persons, viz., the influence of their brains on their intransitively conscious states, cannot absolve an explanation of this aspect from presupposing persons. As brains are no more than parts of persons, so too is neurophysiological explanation no more than a part of the explanation of persons.

Conclusion

The fact that persons are more than their neurophysiological makeup does not imply that neurophysiology is irrelevant to an explanation of persons and what they do and say. As we have seen, neurophysiology is particularly relevant in understanding and explaining intransitive consciousness, while it has a far lesser role in explaining transitive consciousness. However, a purely neurophysiological explanation is not sufficient to explain any sort of consciousness, precisely because it leaves out of the explanations those very things which are conscious, persons. Hacker warns that crossing the language of persons with the language of
neurophysiology "produces a conflict of rules and hence incoherence", but only if one attempts to reduce the "person story" to the "brain story" (Hacker 148-9). If the "brain story" is viewed as no more than a supplement to the prior, basic "person story", and if stipulations of applicability are carefully laid out, then the crossing of languages need not result in incoherence; rather, it might lead to a more inclusive and unitary account of persons — for whatever else they are, persons are beings which possess brains, and these brains are necessary for their personhood. What I have attempted to do here is provide a basic outline for how such a project might proceed.

WORKS CITED


Notes

1. Animals can, of course, perceive things and have sensations, but it is dubious whether or not they can engage in more complex cognitive activities.

2. This is (admittedly) a quick rejoinder to anyone who would assume that a Wittgensteinian approach dispenses with the subjective aspect of personhood in favour of a behaviorist or verificationist stance.

3. Eliminative materialists willfully deny its existence; I can only dismiss this as absurd a philosophical position as one could ever take.

4. Malcolm and others go on to use this distinction in debates about the nature of introspection and self-consciousness. While it is true that these issues follow from the distinction, my project here is to show how these concepts of consciousness relate specifically to the materialist thesis.

5. This is not the same as Searle’s notion of “Background” (Searle 175ff.).

6. The literature seems equally divided on whether intransitive consciousness presupposes transitive consciousness; I am inclined to say that it does not, although it is almost always the case that manifestations of transitive consciousness constitute the criteria by which we attribute intransitive consciousness.

7. Dreaming constitutes an exception; we dream of things, hence it is clearly a type of transitive consciousness. Nevertheless, I believe dreaming can be accommodated on this model; as a sketch, I suggest that one could posit a very low level of intransitive consciousness (“awakeness”) which would facilitate the transitive consciousness of dreaming (which itself seems to be a peculiar species of imagination).

8. I do not claim to be abreast of state-of-the-art neurophysiology, but this is the sense I get of the discipline’s status.

9. I do not wish to identify transitive consciousness and intentionality; there seem to be many cases of intentionality without transitive consciousness. For example, a belief is intentional even if one is not presently conscious of that belief.

10. The discovery that certain areas of the brain are “modules” for certain types of transitive consciousness (especially perception) is an example of a small step towards such a parallelism.
11. To say nothing of the Nagelian objection that a reductive materialist account could not possibly account for the subjective, qualitative nature of consciousness; such subjectivity seems to be an *essential* aspect of consciousness (transitive or intransitive).