

the review of metaphysics

a philosophical quarterly

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Source: *The Review of Metaphysics*, Vol. 22, No. 1 (Sep., 1968), pp. 15-35

Published by: Philosophy Education Society Inc.

Stable URL: <http://www.jstor.org/stable/20124744>

Accessed: 09/09/2009 16:27

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ON THE ELIMINATION OF 'SENSATIONS' AND SENSATIONS

JAMES W. CORNMAN

THE METAPHYSICAL DOCTRINE OF MATERIALISM is attractive to many philosophers, especially those impressed with the physical sciences and the obvious advances in knowledge resulting from them. It often seems to such philosophers that science is advancing towards a state where physics will be not only the basic science upon which all other sciences are erected, but also the one science to which all other sciences are reducible. This is the view, then, that in the millenium physics will be sufficient for the purposes of explaining and predicting the behavior of everything including persons. The contemplation of this "future" state has led many philosophers to materialism.

Nevertheless, despite whatever optimism about the future unification of sciences is justified, there are now, as there have been for centuries, difficult problems confronting the materialist. Perhaps the crucial problem concerns the status of sensations, a problem clearly evident as far back as Hobbes who said that sense is "some internal motion in the sentient, generated by some internal motion, of the parts of the object, and propagated through all the media to the innermost part of the organ."¹ Here Hobbes reduces sense to physical motion. But he is also found to say that sense is not motion, but "in all cases, is nothing else but original fancy," or, he says elsewhere, "phantasms" caused by internal motions.² He is then directly faced with the problem of reconciling appearances and sensations with his avowed materialism. Neither Hobbes nor any one else has solved this problem, although there have recently been some novel and instructive attempts to do so.

¹ *Hobbes Selections*, ed. by F. J. E. Woodbridge (New York, 1930), p. 139.

² *Ibid.*, p. 140.

*Two Materialistic Theories:**The identity theory and the postulation elimination theory*

The most widely discussed recent attempt tries to justify the claim that each sensation is identical with some physical phenomenon, presumably, a brain process. Thus pains have been claimed to be identical with stimulations of the C-fibers of certain kinds of brains. Such a mind-body identity theory can be called a *reductive materialism*, because while admitting that there are mental phenomena such as sensations, it states they are identical with and thus reducible to brain processes.³ Another recent attempt tries to justify the claim that there are no mental phenomena such as sensations, because such phenomena, like electrons, are theoretical entities postulated by scientific theories to explain observable behavior, but, unlike electrons, are unnecessary for such explanations.⁴ As Quine says, "But if a certain organization of theory is achieved by thus positing distinctive mental states and events behind physical behavior, surely as much organization could be achieved by positing merely certain correlative physiological states and events instead. . . . The bodily states exist anyway, why add the others?"⁵ This second attempt to justify materialism can be called an *eliminative materialism*, because it attempts to eliminate mental phenomena rather than reduce them to something physical. Let us call this particular version of eliminative materialism the postulation-elimination theory.

Both the identity theory and the postulation-elimination theory face obvious objections which so far have not been countered. It seems that sensations are not identical with brain proc-

³ For examples of this position, see J. J. C. Smart, "Sensations and Brain Processes," *The Philosophical Review* (1959), pp. 141-156; and H. Putnam, "Minds and Machines," *Dimensions of Mind*, ed. by S. Hook (New York, 1961), p. 38.

⁴ Cf. W. V. O. Quine, *Word and Object* (New York, 1960), pp. 264-266. However, although he construes sensations as unnecessary postulated entities, Quine does not opt for either an eliminative or a reductive position. A similar view is expressed in D. K. Lewis, "An Argument for the Identity Theory," *The Journal of Philosophy* (1966), pp. 17-25.

⁵ W. Quine, p. 264.

esses because they have properties no brain processes have.* And it seems sensations cannot be eliminated by construing them as unneeded postulated theoretical entities, because we directly experience them, and so they are not postulated.⁷ Recently, however, Richard Rorty has made a new attempt to solve the materialist's problem with sensations in a way that avoids both of these objections.⁸ Although Rorty claims his theory is a version of the identity theory, he does not construe the relation between brain processes and sensations to be "strict identity but rather the sort of relation which obtains between, to put it crudely, existent entities and non-existent entities. . . ." His theory can, I think, best be explicated as a subtle kind of eliminative materialism that does not construe sensations as postulated. On this interpretation the theory avoids the objection to the postulation-elimination theory. And, not claiming sensations are strictly identical with brain processes, it avoids the property objection to the identity theory. It is, consequently, a position deserving close scrutiny.

A Third Materialistic Theory: The 'sensation'-elimination theory

To characterize this third theory, let me contrast it with the two previously discussed theories. This can best be done I think by construing all three theories to be about the reference of sensation-terms. All three theories, as I shall construe them, agree that sensation-terms are referring terms, but they disagree about whether they denote, that is, whether there exists anything which they refer to. In this regard all three theories disagree with certain versions of eliminative materialism we shall not examine here. According to the latter theories, psychological terms are not referring terms. For example, there is a form of logical behav-

* Cf. J. Smart, pp. 148-150; J. R. Stevenson, "Sensations and Brain Processes: A Reply to J. J. C. Smart," *The Philosophical Review* (1960), pp. 505-510; J. Cornman, "The Identity of Mind and Body," *The Journal of Philosophy* (1962), pp. 486-492.

⁷ I have discussed this point in more detail in "Mental Terms, Theoretical Terms, and Materialism," *Philosophy of Science* (1968).

⁸ R. Rorty, "Mind-Body Identity, Privacy, and Categories," *The Review of Metaphysics*, Vol. XIX, No. 1 (September, 1965), pp. 24-54.

⁹ *Ibid.*, p. 26.

iorism which states that psychological terms are incomplete symbols and therefore are not referring terms.¹⁰ There is also a Rylean position that takes an instrumentalist or inference ticket view of psychological terms, that is, the view that they are merely non-denoting symbolic inference devices, and thus function solely to warrant inferences among observation claims.¹¹

Whereas the postulation-elimination theory asserts that sensation-terms do not denote anything at all, both the identity theory and the 'sensation'-elimination theory agree that sensation-terms denote certain phenomena, indeed phenomena we experience. The latter two theories further agree that what sensation-terms such as 'pain' denote is exactly what is denoted by certain physicalistic expressions such as 'stimulation of C-fibers', but they disagree about whether sensations are to be considered identical with anything physical. Both theories agree that what we denote when using sensation-terms are nothing but certain brain events, and thus that these brain processes exist. But while the identity theory agrees that there are sensations because they are identical with such brain processes, the 'sensation'-elimination theory denies there are sensations and thereby denies the identity claim.

Objection to the 'Sensation'-Elimination Theory: It is inconsistent

At this point an objection might be raised against the 'sensation'-elimination theory. Surely, according to this objection, for any term 'p', if what is denoted by 'p' is nothing but what is denoted by 'q', and what 'q' denotes, namely q, exists, then p exists, for it follows that p is identical with q. For example, if what is denoted by 'LBJ' is what 'the president of the U.S.A. in 1967' denotes, and the president exists in 1967, then it follows

¹⁰ For an example of logical behaviorism, see C. Hempel, "The Logical Analysis of Psychology," *Readings in Philosophical Analysis*, ed. by H. Feigl and W. Sellars (New York, 1949), pp. 373-384. I have discussed this position in *Metaphysics, Reference, and Language* (New Haven, 1966), pp. 17-25.

¹¹ This view derives from Gilbert Ryle's discussion of psychological sentences as law-like and, thereby, as inference tickets, in *The Concept of Mind* (New York, 1949), esp. chaps. 1 and 5. I have discussed Ryle on this point in *Metaphysics, Reference, and Language*, pp. 63-70, 236-238.

that LBJ is identical with the president in 1967, and that LBJ exists in 1967. Another way to put this objection is that if it is granted, as is done by a 'sensation'-elimination theorist, that the referents of sensation-terms and certain physicalistic terms are identical, and that these physicalistic terms denote brain processes, then the identity claim of the identity theory and with it the existence of sensations are entailed. The 'sensation'-elimination theory, according to this objection, is inconsistent.

This objection can be refuted. It states that two of the claims of the 'sensation'-elimination theory:

(a) What is denoted by 'sensation' is nothing but what is denoted by 'brain process'

(b) What is denoted by 'brain process' are brain processes together entail:

(c) Sensations are identical with brain processes.

But because the 'sensation'-elimination theory denies (c), it is inconsistent.

It is true that (a) and (b) entail:

(d) There are brain processes

and also:

(e) What is denoted by 'sensation' exists.

But (a), (b), (d), and (e) do not entail (c). To show that they do not, I shall list seven cases in which statements of the same form as (a) and (b) are true and then point out that in some of the cases the corresponding claim of the same form as (c) is false. From this we can conclude that sentences of the same form as (a) and (b) do not entail (c). Thus (a) and (b) do not entail (c) and the objection fails.

(1) What is denoted by 'the morning star' is nothing but what is denoted by 'Venus', and that is Venus.

(2) What is denoted by 'unicorn horn' is nothing but what is denoted by 'narwhal horn', and they are narwhal horns.

(3) What is denoted by 'water' is nothing but what is denoted by 'conglomeration of H₂O molecules', and they are conglomerations of H₂O molecules.

- (4) What is denoted by 'lightning flash' is nothing but what is denoted by 'electrical flash', and they are electrical flashes.
- (5) What is denoted by 'Zeus' thunderbolt' is nothing but what is denoted by 'flash of electrical charges', and they are flashes of electrical charges.
- (6) What is denoted by 'Zeus, the thrower of thunderbolts' is nothing but what is denoted by 'discharge of static electricity', and they are discharges of electricity.
- (7) What is denoted by 'pink rat' is nothing but what is denoted by 'pink-rat-appearance', and they are pink-rat-appearances.¹²

The examples relevant to rebutting the objection mentioned above are (2), (5), (6), and (7). In each of the other three cases it is generally agreed that claims of the form of (a) and (b) are true and that the corresponding identity claims of the form of (c) are also true, whether or not the first two entail the third. The morning star is identical with Venus, water is identical with certain conglomerations of H₂O molecules, and flashes of lightning with electrical flashes. And, of course, in each case we would agree that these entities so "reduced" exist. But we would think differently in the other four examples. Surely there are narwhal horns, electrical flashes, discharges of static electricity, and pink-rat-hallucinations, but there is no reason to think there are unicorn horns, Zeus' thunderbolts, Zeus, and pink rats. In each of these cases, then, we should reject the identity claim, but at the same time accept the corresponding denotation claims. We can conclude from this that a conjunction of statements of the form of (a) and (b) do not entail identity claims of the form of (c), and therefore this objection to the 'sensation'-elimination theory fails. There is no reason to doubt that the theory is consistent. But is it plausible?

¹² Several of these examples and the following discussions of them are derived from R. Rorty, pp. 27-35.

*An Attempt to Justify the 'Sensation'-Elimination Theory
by Analogy*

An obvious way to try to justify the 'sensation'-elimination theory is to show its claim, i.e., what is denoted by sensation-terms is nothing but what is denoted by 'brain process', is relevantly analogous to one of the above mentioned examples where we are justified in making the two claims about denotation, and also justified in denying the corresponding identity claim. Let us, therefore, compare it with each example.

Consider the second example about 'unicorn horn'. Here we have a claim about the common referents of two different observation terms when, for example, people have pointed to a narwhal horn and called it a unicorn horn. Such people have made a straight forward empirical mistake. This can be shown by gathering evidence to show that there are no unicorns and thus no unicorn horns, or by tracing the history of the particular horn in question. But in many cases of using sensation-terms to talk about something, no mistake can be shown by piling up this kind of nontheoretical, empirical evidence in these ways. In such cases a claim that someone is having a sensation does not entail any nontheoretical, empirical falsehood. We cannot, therefore, justify the claim of the 'sensation'-elimination theory by likening sensation-terms to 'unicorn horn'.

The fifth example about 'Zeus' thunderbolt' concerns two terms that, although they are observation terms, are not "pure" observation terms. That is, both terms, in the fifth example, unlike those in the second example, are theory laden observation terms, in the sense that, although they are used to report what is observed, a report using them entails that there is some postulated theoretical entity, e.g., Zeus or an electrical charge. Here again we would agree that there are phenomena denoted by 'Zeus' thunderbolt' but deny the corresponding identity claim that these phenomena are identical with thunderbolts thrown by Zeus, because there is no being named 'Zeus'. In this case we deny that Zeus' thunderbolts exist because their existence entails that Zeus exists and we reject the latter claim for reasons quite different from the nontheoretical empirical grounds used in example (2). The statement 'Zeus exists' is not a false observation statement nor

does it entail one. It is, let us say for our purposes here, a theoretical statement about the unobserved cause of lightning flashes. It, then, competes with the "more scientific" theoretical explanations of lightning and is rejected because, roughly, some scientific theory that competes with it has more explanatory and predictive power. It might be noted in passing, however, that one could consistently maintain that lightning is caused by Zeus, while accepting all available empirical evidence and also the justification of a competing scientific explanation of lightning, if he were to subscribe to an instrumentalist view of scientific theoretical terms.¹³

Can we liken sensation-terms to 'Zeus' thunderbolt'? One difference is that 'Zeus' thunderbolt' is used to report something perceivable, but sensation-terms are not. This is not a vital difference, however, because both terms are reporting terms, in the sense that both are used to refer to phenomena that we experience, in the one case via perception, in the other not. But there is an important difference. The term 'Zeus' thunderbolt' is theory laden because its use in a report entails that there is a postulated theoretical entity, Zeus. But not all sensation-terms are theory laden in this way, unless whatever they are used to refer to are themselves postulated theoretical entities, because many reports using sensation-terms do not entail that there is any other postulated theoretical entity.

The question at this point is whether what sensation-terms are used to refer to are postulated theoretical entities. Because something is such an entity only if we do not experience it, we can conclude that what sensation-terms refer to are postulated theoretical entities only if we do not experience the entities referred to. Consequently we can use the fifth example to justify the elimination of sensations only if sensation-terms are nonreporting, or pure, theoretical terms. But the 'sensation'-elimination theory cannot take this tack, because it construes sensation-terms as

¹³ This, in effect, is what Berkeley does in combining his instrumentalist view of scientific theoretical terms with his claim that God is the cause of the sensory ideas that make up the world. I have discussed this in "Theoretical Terms, Berkeleyian Notions, and Minds," forthcoming in a book tentatively titled, *Berkeley: Principles of Human Knowledge: Text and Commentaries*, ed. C. M. Turbayne (Indianapolis, Bobbs-Merrill).

reporting terms. Furthermore, the theory is certainly correct in this; sensation-terms are clear cases of terms used to report what we experience.¹⁴ Consequently the fifth example cannot help the justification of the elimination of sensation-terms and sensations.

The sixth example differs from the two previously discussed because it concerns two terms neither of which, for our purposes, are observation terms, either pure or theory laden. It is like the fifth example, however, in that we justify the denial of the existence of Zeus, and thereby the denial of the corresponding identity claim about Zeus and electrical discharges, on theoretical grounds. Indeed both terms of the sixth example are pure theoretical terms, because they are neither observation terms, nor definable by observation terms, nor reporting terms. It is examples such as this that the postulation-elimination theory uses to justify its position. It is claimed that sensation-terms are, in principle, like 'Zeus' in that their scientific explanatory role can be taken over by physiological terms, and thus sensation-terms are unnecessary for explanation and prediction. But we have already noted the problem facing this position. Sensation-terms are used to report phenomena we experience whether or not they have any explanatory function, and therefore we cannot justify their eliminability merely by eliminating their explanatory functions so long as they have a reporting function. Example (6) fails to help justify the elimination of sensations.

It is clear that example (7) cannot help, because the elimination of pink rats results from construing the reference of 'pink rat' to be sensations rather than physical objects. As Rorty notes, we cannot eliminate sensations by construing them as the referents of sensation-terms.¹⁵ This leads us to the conclusion that none of the four examples of justified elimination of entities can be used to provide justification for eliminating sensations. If an eliminative materialist is to justify his position he must take a different line altogether.

¹⁴ I have discussed this in more detail in "Mental Terms, Theoretical Terms and Materialism."

¹⁵ See R. Rorty, pp. 37-38.

*Another Attempt to Justify the 'Sensation'-Elimination Theory:
No need for sensation-terms*

Rorty's approach to the justification of what I have explicated as the 'sensation'-elimination theory is such a new line. Although he begins by likening the case of sensations to an hallucination example about demons, he ends by likening it to a physical object example about tables. What he does is liken claims such as: what is denoted by 'sensation' is nothing but what is denoted by 'brain process', to a claim such as: what is denoted by 'table' is nothing but what is denoted by 'conglomeration of molecules'. At first glance this move seems self-defeating, because the table case is like example (4) with 'water' where we do not conclude there is no water. But while admitting this, Rorty seeks to explain this conclusion about tables in such a way that it will aid the 'sensation'-elimination theory. He says,

If there is any point to saying that tables are nothing but clouds of molecules it is presumably to say that, in principle, we could stop making a referring use of "table," and of any extensionally equivalent term, and still leave our ability to describe and predict undiminished. But this would seem just the point of (and the justification for) saying that there are no demons. Why does the realization that nothing would be lost by the dropping of "table" from our vocabulary still leave us with the conviction that there are tables, whereas the same realization about demons leaves us with the conviction that there are no demons? I suggest that the only answer to this question which will stand examination is that although we could *in principle* drop "table," it would be monstrously inconvenient to do so, whereas it is both possible in principle and convenient in practice to drop "demon."¹⁶

If Rorty is right, then the only relevant difference between hallucination examples such as cases of demons and pink rats, and physical object examples such as cases of tables and water, is that it is very inconvenient to give up table-talk for molecule-talk but not inconvenient to give up demon-talk for hallucination-talk. And if this is so, then, although as in example (4) we do not in practice say that there are no tables, we are nevertheless justified in concluding that there are none. This is because if the only thing that keeps us from drawing this conclusion is linguistic con-

¹⁶ *Ibid.*, p. 34.

venience, something of no ontological relevance, then the conclusion is justified for purposes of ontology. Rorty's point, then, is that for the purposes of justifying an ontological position, the 'sensation' case is relevantly like the 'table' case which is relevantly like the hallucination case after all. Our task in evaluating Rorty's claim, therefore, is to see whether there are any differences among these three cases sufficient to destroy his justification of the elimination of sensations.

Let us grant that if sensation-terms are not needed for correctly explaining, predicting, reporting, and describing, then Rorty has made his point that we are justified in eliminating sensations, while at the same time we are justified in using the terms to avoid inconvenience. Let us also grant, what is surely more debatable, that neither terms such as 'table' and 'water' nor sensation-terms are needed for either explanation or prediction. The question, then, is whether our ability to report and describe would remain undiminished if these terms were eliminated from language.

The crux of Rorty's case that sensation-terms are unnecessary for the purpose of correctly reporting and describing lies in the following passage:

And why should it not be the case that the circumstances in which we make non-inferential reports about brain-processes are just those circumstances in which we make non-inferential reports about sensations?¹⁷ For this will in fact be the case if, when we were trained to say, e.g., "I'm in pain" we were in fact being trained to respond to the occurrence within ourselves of a stimulation of C-fibers. If this is the case, the situation will be perfectly parallel to the case of demons and hallucinations. We *will*, indeed, have been making non-inferential reports about brain-processes all our lives *sans le savoir*.¹⁷

Rorty is claiming here that there is no reason why we should deny an exact parallel between demon-reports, or pink-rat-reports, and pain-reports. And he might add that the parallel should extend to water-reports. There certainly is at least one parallel here. We can use 'There's H₂O here' instead of 'There's water here', and it would seem we would be making more accurate reports in so doing. If we can also use some physicalistic expression such as,

¹⁷ *Ibid.*, p. 40.

'My C-fibers are stimulated' to report the occurrence of what we usually report by 'I'm in pain', and if, in so doing, we would be making more accurate reports, then both cases would be perfectly parallel to the case of pink-rat-reports in the relevant respects, because using 'I see a pink-rat-appearance' is more accurate than using 'I see a pink rat'. Rorty thinks this parallel is enough to make his case: just as we do not need 'pink rat', we need neither 'pain', nor 'water' nor any other sensation-terms and observation terms to report and describe what occurs.

First Objection: Sensation-terms needed for reporting

We can grant that if 'stimulation of C-fibers' and 'pain' refer to the same things, then there is a clear sense in which we would lose no ability to refer to anything, and consequently, a clear sense in which we would lose no ability to report something, if we dropped 'pain' and all other psychological terms that refer to what 'pain' refers to. That is, although our ability to refer to things would be diminished in the sense that we would have fewer nonsynonymous terms to use to refer to things, our ability to identify in *some* way each thing there is would not be diminished. And, it is clear that it is the latter ability that is relevant to Rorty's claim about our reporting ability.

The problem is, however, whether 'stimulation of C-fibers', or some other physicalistic term, and 'pain' do refer to the same things. If they do not, then our ability to identify in some way each thing there is would be diminished if we were to drop 'pain' and all other psychological terms that refer to what 'pain' refers to. Rorty then can establish his claim about our undiminished reporting ability, only if he has reason to think that some physicalistic terms refer to what sensation-terms refer to. But this identity of reference is just what Rorty is trying to establish. Thus he cannot use his claim about our undiminished reporting ability to help justify his identity of reference claim as he tries to do.

Two replies might be made at this point. First, someone might claim that although J. J. C. Smart was wrong to think that topic neutral language could be used to give the meaning of sen-

sation-sentences,¹⁸ his mistake can be converted into a sound point. Namely, topic neutral expressions, although not synonymous with sensation-expressions, can be used to identify in some way each thing we now use sensation-terms to identify. Thus, contrary to the previous objection to Rorty, we can drop sensation-terms without diminishing our ability to identify each thing in some way.

The problem for this reply is whether there is reason to think topic neutral terms will do the job of replacing the reporting function of sensation-terms. Consider first an attempt derived from Smart's suggested translation of 'I have a pain', a suggestion he later claims is merely an attempt to give "the general purport of sensation-reports."¹⁹ Thus we might try to replace 'pain' by:

Something that happens to someone like what happens when he is stuck with a pin.

This is neutral because there is no implication about whether this something is mental or physical. But the problem is that this reporting-expression is not specific enough to pick out from several things that happen in such situations just what we identify using 'pain'. A more specific phrase might be used, such as:

Something that happens to someone when and only when his C-fibers are stimulated.

This would identify one kind of thing which might well be what we identify using 'pain', if there is only one kind of thing that happens when and only when C-fibers are stimulated. But the problem is whether there is only one such kind of thing. Thus although this attempt might work, it cannot be decided merely by philosophers, for it cannot be decided without scientific investigation. We cannot, then, rely on this reply to the previous objection.

If the second reply is sound, however, we need not worry about finding suitable topic neutral expressions to take over the

¹⁸ For Smart's attempted analysis, see J. Smart, pp. 149-150. I have discussed problems facing his analysis in *Metaphysics, Reference and Language*, pp. 42-45.

¹⁹ J. Smart, "Brain Processes and Incorrigibility," *Australasian Journal of Philosophy* (1962), p. 69.

reporting functions of sensation-terms. There is reason to think that pains occur when and only when C-fibers are stimulated, and so, according to this reply, we can use 'stimulation of C-fibers' to report what we now use 'pain' to report: Thus "My C-fibers are stimulated!" could be used to report what "I have a pain!" reports. The immediate objection to this is that nothing can be solved this way for there is no more reason to think that 'stimulation of C-fibers' with this new reporting role has univocal reference than to think that it has ambiguous reference, referring to certain brain states and, in addition, pains. But, in the spirit of Rorty's argument, a materialist might well reply that if the *only* thing that *might* be lost is univocal reference, and there is no reason to conclude it would be lost, then we are justified in assuming that the reference is univocal. And, consequently, we can also assume that our ability to identify in some way each thing there is would remain undiminished if sensation-terms were dropped from language. This brings us finally to the central question of whether the only thing that might be lost is an unverifiable ambiguity of reference. To see that there is reason to think more would be lost than that, we can turn to the second objection to Rorty's claim.

Second Objection: Sensation-terms needed for true descriptions

For the purposes of considering the present objection, let us grant Rorty one more point, that not only can we explain and predict everything that occurs without sensation-terms and observation terms, but also we can report, in the sense of identify, everything there is without such terms. Although Rorty may think we have granted him all he needs to make his point, we shall find that we have not. We have not settled the question of whether or not our ability to describe what there is would be diminished if we dropped these terms from our language. In order to answer this question, we must again be clear about what kind of ability is relevant to Rorty's claim. We can distinguish at least three different kinds of descriptive ability:

- (1) The ability to make many different sorts of descriptions of what there is.

- (2) The ability to make accurate descriptions of what there is.
- (3) The ability to make true descriptions, i.e., use true sentences to describe what there is.

It is clear that the first kind of ability would be diminished if we dropped sensation-terms and observation terms, but it is also clear that having only this ability diminished would not affect Rorty's point. If the second and third kinds of abilities remain undiminished his point is sound. If, however, either of these two kinds of abilities are diminished, then Rorty's argument fails.

Consider first the second kind of ability. If we would lose accuracy in our descriptions by dropping certain terms, then we could not justify the claim that they are needed only for convenience. This may be the kind of ability Rorty considers, and, if so, we might well agree with him that descriptions without sensation-terms and observation terms would be no less accurate and precise, no more vague and unclear, than if we used such terms. Indeed using only mathematically formulated descriptions would seem to result in more accuracy rather than less. Let us assume, then, that Rorty is right concerning the second kind of descriptive ability.

Descriptions of what there is would be no less accurate if we dropped sensation-terms and observation terms. But would they be complete? Would there be any true descriptive sentences we would be unable to formulate? If there would be some, then one kind of descriptive ability relevant to what there is would be lost and Rorty's argument would fail. We cannot justify eliminating terms needed for making true descriptions. It seems clear that concerning this kind of descriptive ability a parallel holds between sensation-terms and observation terms, but this is the wrong parallel for Rorty's argument. A theoretical statement will provide the same description as an observation sentence only if the two statements are synonymous. Thus the observation description of water, or H_2O , as a clear, wet fluid can be made only by a sentence synonymous with 'Water (H_2O) is a clear, wet fluid'. But there is reason to think that no purely theoretical sentence is synonymous with this sentence. Observation sentences seem to be unanalyzable by theoretical sentences. Thus to eliminate all observation terms would result in our being unable to ascribe to

water those observable properties it surely seems to have, and our ability to make true descriptions of water would seem to be considerably diminished.

The same conclusion applies to sensation-terms. Even if we grant that a pain is identical with a stimulation of C-fibers, it would seem we shall still need sensation-terms to make the true descriptions of certain pains, or stimulation of C-fibers, as, for example, intense, sharp and throbbing. No neurophysiological sentence is synonymous with 'This pain (stimulation of C-fibers) is intense, sharp, and throbbing', and thus no neurophysiological sentence can be used to make the same true description. Thus to eliminate the sensation-terms we apply to what we experience would seem to diminish our ability to describe considerably. Rorty, although he may be correct about explaining and predicting, and even if we grant he is right about reporting, seems wrong about describing. It would be more than convenience that would be lost if we were to eliminate sensation-terms and observation terms. The eliminative materialist cannot justify the elimination of sensations in the way Rorty claims he can.

First Reply: Non-synonymy of expressions is merely contingent

It might be replied to the previous objection that it is based on a contingent fact dependent on the present state of language. There is no reason why in the future theoretical terms could not take on the descriptive roles of both observation terms and sensation-terms. When that time comes, according to this reply, the last obstacle to the acceptance of the 'sensation'-elimination theory will disappear and the theory will be acceptable. And, it might be added, because there is nothing, except perhaps ingrained usage and convenience, to stop theoretical terms from acquiring these roles, it does not matter whether they actually ever do acquire them. If observation terms and sensation-terms are in principle eliminable, then the 'sensation'-elimination theory is justified.

This reply does point to one clear way terms can be eliminated, but, unfortunately, it is not a kind of elimination that will help an eliminative materialist. Let us assume that 'Jones' C-fibers are very stimulated' has acquired the descriptive role of 'Jones'

pain is intense', and that it also retains its theoretical role. Let us also grant that if this role change occurs, then 'Jones' pain is intense' is no longer needed to make a true description of Jones because 'Jones' C-fibers are very stimulated' gives us this description of Jones and more. The objection to such a reply is not, as has been suggested, that "conjectured future concepts" are irrelevant to the question of materialism because the question is about our present concepts.²⁰ The question is about what there is. Questions about concepts whether past, present, or future, are relevant only in so far as they help answer the question of what there is. The objection is, rather, that the reason we would no longer need 'Jones' pain is intense' is that what it states would be entailed by 'Jones' C-fibers are very stimulated'. Consequently, we could no longer even make certain physiological claims about the brain without implying that there are sensations. This is surely a move in the wrong direction for an eliminative materialist.

The failure of the previous kind of linguistic elimination to help the eliminative materialist points to the kind of elimination of terms he requires. The elimination must accomplish at least two things. First, as we have already seen, it must show the terms eliminated are not needed for any true description. Second, as the present discussion emphasizes, it must also show that all of the descriptive roles played by the eliminated terms in true statements can be played by purely physicalistic terms, that is, terms that can be used to describe physical phenomena without implying the existence of anything mental. It is not important, then, which words we use now or ever. What matters is which descriptive roles they play. Merely to eliminate or change terms, and thus to leave untouched the descriptive roles they play, has no ontological significance. Thus because 'stimulation of C-fibers' taking on the descriptive role of 'pain' accomplishes only the elimination of 'pain' and not its role in true descriptions, such an elimination of sensation-terms fails to help the eliminative materialist. Indeed, if this is the only way sensation-terms can be eliminated, we should reject eliminative materialism, because we must either keep sensation-terms to make true descriptions or change physicalistic

²⁰ Cf. N. Malcolm, "Scientific Materialism and the Identity Theory," *Dialogue* (1964), p. 119.

terms in such a way that using them descriptively implies that there are sensations.

Second Reply: H_2O without water and sensing without sensations

The previous discussion leads to the conclusion that, contrary to Rorty, the case of water and pain are not "perfectly parallel to the case of demons and hallucinations." There is, however, a new move that would make the cases of water and pink rats perfectly parallel. This is a move a scientific realist might make, that is, to claim that, although we commonly suppose the referents of observation-expressions to be physical objects and their sensible qualities, what they actually refer to are sense impressions caused in us by physical objects. What refer to physical objects and their properties are the theoretical terms of science; they provide the most accurate and comprehensive description of physical objects that is available.²¹ If we were to adopt this position, then we could agree that although our ability to describe would be diminished in one way by eliminating observation terms, it would not be the relevant way. Nothing would be lost for the purposes of making accurate and complete descriptions. We would still have available all the terms needed to make accurate and true descriptions: theoretical terms to describe physical objects and their properties, and nonobservation terms, such as 'clear-wet-appearance' to describe the sense impressions and their sensible qualities we experience.

This move by a scientific realist makes the cases of water and pink rats parallel because in both cases when we ascribe sensible qualities to what we experience, we are describing sense impressions rather than physical objects. But this move destroys the parallel between the cases of water and sensations. If we make this move, then, although the only thing lost by eliminating observation terms is convenience, it seems clear that our ability to describe truly would be vastly diminished if all sensation-words were eliminated. We would then be unable to make descriptions

²¹ See W. Sellars, *Science, Perception and Reality* (London, 1963), esp. chaps. 1 and 3, for a position much like this one.

of what we experience. Indeed, we would be unable to describe sense impressions in the ways we ordinarily and "mistakenly" describe physical objects when we use observation terms.

A 'sensation'-elimination theorist is not finished yet however. He might claim that, contrary to what is said above, we do not need sensation-terms such as 'pink-rat-appearance' to describe our sensory experiences. He could defend this claim by denying any descriptive need for the appearance terminology, and thus any need for sensation-terms to attribute properties to impressions, or appearances. This defense requires that he replace the appearance terminology with another equally adequate to describe sensory experience. If R. M. Chisholm is right, this can be done. We can use an adverbial sensing terminology instead. Chisholm says,

When we say "The appearance of the thing is white," our language suggests that we are attributing a certain property to a substance. But we could just as well have said "The thing appears white," using the verb "appear" instead of the substantive "appearance." And in "The thing appears white," as already noted, the word "white," in what we have called its sensible use, tells us something about the way in which the object appears, just as "slowly" tells us something about the way in which an object moves.²²

And where we do not wish to imply there is an object appearing to someone we can say "He senses whitely" instead of "He senses a white appearance." In saying the former,

we are not committed to saying that there is a thing—an appearance—of which the word "white," in its sensible use, designates a property. We are saying, rather, that there is a certain state or process—that of being appeared to, or sensing, or experiencing—and we are using . . . the adverb "whitely," to describe more specifically the way in which the process occurs.²³

If Chisholm is right, then no descriptive ability would be lost by eliminating the appearance terminology if we adopted, instead, the adverbial sensing terminology. This move, then, would provide for the elimination of sensation-terms required by the 'sensation'-elimination theory. Have we finally reached a point of eli-

²² R. Chisholm, *Theory of Knowledge* (Englewood Cliffs, N.J., 1966), pp. 95-96.

²³ *Ibid.*, p. 96.

mination sufficient to justify some form of eliminative materialism? Clearly we have not. It surely seems we cannot also eliminate the sensing terminology without considerably diminishing our descriptive ability, because we often truly describe someone in saying that he is sensing whitely and no purely physicalistic statement makes the same description.

Final Reply: What explains best describes best

The conclusion we have now reached is that although it may be that neither observation terms nor sensation-terms are needed for accurate and true descriptions of what there is—because the function of the former can be taken over by the joint use of theoretical terms and sensation-terms, and the function of the latter taken over by sensing-terms—the elimination seems unable to go further. We seem left with a residue of terms, and it surely seems phenomena, that cannot be eliminated. There is, however, one last move an eliminative materialist might try. He might adopt an extreme version of scientific realism, one which holds that in all cases those pure theoretical terms of science that provide the best available explanations of behavior also provide the best available descriptions of the things whose behavior they explain. That is, not only is each theoretical sentence at least as accurate a means of description as any other sentence available for describing the same thing, but all theoretical sentences that explain a particular phenomenon, when taken together, provide a true description of what they explain that is more accurate and more comprehensive than any other description of the same phenomenon. If also, as this kind of scientific realist believes, the theoretical terms of neurophysiology provide the best available explanation of the behavior that sensing-terms are used to explain, then some set of neurophysiological sentences would provide a true description of someone that is more accurate and comprehensive than any set that includes sentences such as 'He sensed a white appearance' or 'He sensed whitely'. Strictly speaking, there would be no sensations and no sensings, but only a misapprehension by us of what really occurs, perhaps some brain process with only physicalistic properties.

The objection to this extreme move is that at least with regard to his own sensory phenomena, many a man is fully aware of at least some of their features, for example, that a certain sensing is a sensing whitely rather than a sensing redly. It may be at least plausible to claim physical objects are quite different from what most of us believe, because they are best described by the theoretical terms of science, and it may be plausible to claim that our sensory phenomena have some (e.g., neurophysiological) features we do not experience. But it is most implausible to claim that a man's sensory phenomena have nothing like the features he experiences them to have, with the consequence that he has no special epistemological status even regarding those features he believes his sensory phenomena have.

Conclusion: A Hobbesian materialism without phantasms?

The previous objection cannot be ignored, and I am not sure how it is to be met. If it cannot be met, then I think a materialist must at some point abandon eliminative materialism, and embrace reductive materialism if he is finally to solve the problems bequeathed to him by Hobbes. He must turn to the identity theory, and, consequently, must face the property objection confronting it. It may be, however, he can avoid one problem inherited from Hobbes. If the materialist can adopt the adverbial metaphysical position associated with the sensing terminology, then he need not worry about Hobbes' phantasms, or sensations, and the problem about the properties sensations have but brain phenomena lack, and those brain phenomena have and sensations lack. This would be an important gain, because this problem seems intractable. He is indeed left with the problem of the properties which sensings and Hobbes' "internal motions," or brain events, might not have in common,²⁴ but this problem may be solvable.

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²⁴ Cf. R. Chisholm, pp. 99-102.