

I

There might be a strange man who sometimes feels pain, just as we do, but whose pain differs greatly from ours in its causes and effects. Our pain is typically caused by cuts, burns, pressure, and the like; his is caused by moderate exercise on an empty stomach. Our pain is generally distracting; his turns his mind to mathematics, facilitating concentration on that but distracting him from anything else. Intense pain has no tendency whatever to cause him to groan or writhe, but does cause him to cross his legs and snap his fingers. He is not in the least motivated to prevent pain or to get rid of it. In short, he feels pain but his pain does not at all occupy the typical causal role of pain. He would doubtless seem to us to be some sort of madman, and that is what I shall call him, though of course the sort of madness I have imagined may bear little resemblance to the real thing.

I said there might be such a madman. I don't know how to prove that something is possible, but my opinion that this is a possible case seems pretty firm. If I want a credible theory of mind, I need a theory that does not deny the possibility of mad pain. I needn't mind conceding that perhaps the madman is not in pain in *quite* the same sense that the rest of us are, but there had better be some straight-forward sense in which he and we are both in pain.

Also, there might be a Martian who sometimes feels pain, just as we do, but whose pain differs greatly from ours in its physical realization. His hydraulic mind contains nothing like our neurons. Rather, there are varying amounts of fluid in many inflatable cavities, and the inflation of any one of these cavities opens some valves and closes others. His mental plumbing pervades most of his body—in fact, all but the heat exchanger inside his head. When you pinch his skin you cause no firing of C-fibers—he has none—but, rather, you cause the inflation of many smallish cavities in his feet. When these cavities are inflated, he is in pain. And the effects of his pain are fitting: his thought and activity are disrupted, he groans and writhes, he is strongly motivated to stop you from pinching him and to see to it that you never do again. In short, he feels pain but lacks the bodily states that either are pain or else accompany it in us.

There might be such a Martian; this opinion too seems pretty firm. A credible theory of mind had better not deny the possibility of Martian pain. I needn't mind conceding that perhaps the Martian is not in pain in *quite* the same sense that we Earthlings are, but there had better be some straightforward sense in which he and we are both in pain.

II

A credible theory of mind needs to make a place both for mad pain and for Martian pain. *Prima facie*, it seems hard for a materialist theory to pass this twofold test. As philosophers, we would like to characterize pain *a priori*. (We might settle for less, but let's start by asking for all we want.) As materialists, we want to characterize pain as a physical phenomenon. We can speak of the place of pain in the causal network from stimuli to inner states to behavior. And we can speak of the physical processes that go on when there is pain and that take their place in that causal network. We seem to have no other resources but these. But the lesson of mad pain is that pain is associated only contingently with its causal role, while the lesson of Martian pain is that pain is connected only contingently with its physical realization. How can we characterize pain *a priori* in terms of causal role and physical realization, and yet respect both kinds of contingency?

A simple identity theory straightforwardly solves the problem of mad pain. It goes just as straightforwardly wrong about Martian pain. A simple behaviorism or functionalism goes the other way: right about the Martian, wrong about the madman. The theories that fail our twofold test so decisively are altogether too simple. (Perhaps they are too simple ever to have had adherents.) It seems that a theory that can pass our test will have to be a mixed theory. It will have to be able to tell us that the madman and the Martian are both in pain, but for different reasons: the madman because he is in the right physical state, the Martian because he is in a state rightly situated in the causal network.

Certainly we can cook up a mixed theory. Here's an easy recipe: First, find a theory to take care of the common man and the madman, disregarding the Martian—presumably an identity theory. Second, find a theory to take care of the common man and the Martian, disregarding the madman—presumably some sort of behaviorism or functionalism. Then disjoin the two: say that to be in pain is to be in pain either according to the first theory or according to the second. Alternatively, claim ambiguity: say that to be in pain in one sense is to be in pain according to the first theory, to be in pain in another sense is to be in pain according to the second theory.

This strategy seems desperate. One wonders why we should have a disjunctive or ambiguous concept of pain, if common men who suffer pain are always in pain according to both disjuncts or both disambiguations. It detracts from the credibility of a theory that it posits a useless complexity in our concept of pain—useless in application to the common man, at least, and therefore useless almost always.

I don't object to the strategy of claiming ambiguity. As you'll see, I shall defend a version of it. But it's not plausible to cook up an ambiguity *ad hoc* to account for the compossibility of mad pain and Martian pain. It would be better to find a widespread sort of ambiguity, a sort we would believe in no matter what we thought about pain, and show that it will solve our problem. That is my plan.

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III

A dozen years or so ago, D. M. Armstrong and I (independently) proposed a materialist theory of mind that joins claims of type-type psychophysical identity with a behaviorist or functionalist way of characterizing mental states such as pain.¹ I believe our theory passes the twofold test. Positing no ambiguity without independent reason, it provides natural senses in which both madman and Martian are in pain. It wriggles through between Scylla and Charybdis.

Our view is that the concept of pain, or indeed of any other experience or mental state, is the concept of a state that occupies a certain causal role, a state with certain typical causes and effects. It is the concept of a state apt for being caused by certain stimuli and apt for causing certain behavior. Or, better, of a state apt for being caused in certain ways by stimuli plus other mental states and apt for combining with certain other mental states to jointly cause certain behavior. It is the concept of a member of a system of states that together more or less realize the pattern of causal generalizations set forth in commonsense psychology. (That system may be characterized as a whole and its members characterized afterward by reference to their place in it.)

If the concept of pain is the concept of a state that occupies a certain causal role, then whatever state does occupy that role is pain. If the state of having neurons hooked up in a certain way and firing in a certain pattern is the state properly apt for causing and being caused, as we materialists think, then that neural state is pain. But the concept of pain is not the concept of that neural state. ("The concept of . . ." is an intensional functor.) The concept of pain, unlike the concept of that neural state which in fact is pain, would have applied to some different state if the relevant causal relations had been different. Pain might have not been pain. The occupant of the role might have not occupied it. Some other state might have occupied it instead. Something that is not pain might have been pain.

This is not to say, of course, that it might have been that pain was not pain and nonpain was pain; that is, that it might have been that the occupant of the role did not occupy it and some nonoccupant did. Compare: "The winner might have lost" (true) versus "It might have been that the winner lost" (false). No wording is entirely unambiguous, but I trust my meaning is clear.

¹ D. M. Armstrong, *A Materialist Theory of the Mind* (London: Routledge, 1968); "The Nature of Mind," in C. V. Borst, ed., *The Mind/Brain Identity Theory* (London: Macmillan, 1970), pp. 67–97; "The Causal Theory of the Mind," *Neue Heft für Philosophie*, no. 11 (Vendenoek & Ruprecht, 1977), pp. 82–95. David Lewis, "An Argument for the Identity Theory," *Journal of Philosophy* 63 (1966): 17–25, reprinted with additions in David M. Rosenthal, ed., *Materialism and the Mind-Body Problem* (Englewood Cliffs, N.J.: Prentice-Hall, 1971), pp. 162–171; "Review of *Art, Mind, and Religion*," *Journal of Philosophy* 66 (1969): 22–27, particularly pp. 23–25; "Psychophysical and Theoretical Identifications," *Australasian Journal of Philosophy* 50 (1972): 249–258; "Radical Interpretation," *Synthese* 23 (1974): 331–344.

In short, the concept of pain as Armstrong and I understand it is a *nonrigid* concept. Likewise the word "pain" is a nonrigid designator. It is a contingent matter what state the concept and the word apply to. It depends on what causes what. The same goes for the rest of our concepts and ordinary names of mental states.

Some need hear no more. The notion that mental concepts and names are non-rigid, wherefore what *is* pain might not have been, seems to them just self-evidently false.² I cannot tell why they think so. Bracketing my own theoretical commitments, I think I would have no opinion one way or the other. It's not that I don't care about shaping theory to respect naive opinion as well as can be, but in this case I have no naive opinion to respect. If I am not speaking to your condition, so be it.

If pain is identical to a certain neural state, the identity is contingent. Whether it holds is one of the things that varies from one possible world to another. But take care. I do not say that here we have two states, pain and some neural state, that are contingently identical, identical at this world but different at another. Since I'm serious about the identity, we have not two states but one. This one state, this neural state which is pain, is not contingently identical to itself. It does not differ from itself at any world. Nothing does.³ What's true is, rather, that the concept and name of pain contingently apply to some neural state at this world, but do not apply to it at another. Similarly, it is a contingent truth that Bruce is our cat, but it's wrong to say that Bruce and our cat are contingently identical. Our cat Bruce is necessarily self-identical. What is contingent is that the nonrigid concept of being our cat applies to Bruce rather than to some other cat, or none.

IV

Nonrigidity might begin at home. All actualities are possibilities, so the variety of possibilities includes the variety of actualities. Though some possibilities are thoroughly otherworldly, others may be found on planets within range of our telescopes. One such planet is Mars.

If a nonrigid concept or name applies to different states in different possible cases, it should be no surprise if it also applies to different states in different actual cases. Nonrigidity is to logical space as other relativities are to ordinary space. If the word "pain" designates

² For instance, see Saul A. Kripke, "Naming and Necessity," in Gilbert Harman and Donald Davidson, eds., *Semantics of Natural Language* (Dordrecht: Reidel, 1972), pp. 253–355, 763–69, particularly pp. 335–36. Note that the sort of identity theory that Kripke opposes by argument, rather than by appeal to self-evidence, is not the sort that Armstrong and I propose.

³ The closest we can come is to have something at one world with twin counterparts at another. See my "Counterpart Theory and Quantified Modal Logic," *Journal of Philosophy* 65 (1968): 113–126. That possibility is irrelevant to the present case.

one state at our actual world and another at a possible world where our counterparts have a different internal structure, then also it may designate one state on Earth and another on Mars. Or, better, since Martians may come here and we may go to Mars, it may designate one state for Earthlings and another for Martians.

We may say that some state *occupies a causal role for a population*. We may say this whether the population is situated entirely at our actual world, or partly at our actual world and partly at other worlds, or entirely at other worlds. If the concept of pain is the concept of a state that occupies that role, then we may say that a state *is pain for a population*. Then we may say that a certain pattern of firing of neurons is pain for the population of actual Earthlings and some but not all of our otherworldly counterparts, whereas the inflation of certain cavities in the feet is pain for the population of actual Martians and some of their otherworldly counterparts. Human pain is the state that occupies the role of pain for humans. Martian pain is the state that occupies the same role for Martians.

A state occupies a causal role for a population, and the concept of occupant of that role applies to it, if and only if, with few exceptions, whenever a member of that population is in that state, his being in that state has the sort of causes and effects given by the role.

The thing to say about Martian pain is that the Martian is in pain because he is in a state that occupies the causal role of pain for Martians, whereas we are in pain because we are in a state that occupies the role of pain for us.

V

Now, what of the madman? He is in pain, but he is not in a state that occupies the causal role of pain for him. He is in a state that occupies that role for most of us, but he is an exception. The causal role of a pattern of firing of neurons depends on one's circuit diagram, and he is hooked up wrong.

His state does not occupy the role of pain for a population comprising himself and his fellow madmen. But it does occupy that role for a more salient population—mankind at large. He is a man, albeit an exceptional one, and a member of that larger population.

We have allowed for exceptions. I spoke of the definitive syndrome of *typical* causes and effects. Armstrong spoke of a state *apt for* having certain causes and effects; that does not mean that it has them invariably. Again, I spoke of a system of states that *comes near* to realizing commonsense psychology. A state may therefore occupy a role for mankind even if it does not at all occupy that role for some mad minority of mankind.

The thing to say about mad pain is that the madman is in pain because he is in the state that occupies the causal role of pain for the population comprising all mankind. He is an exceptional member of

that population. The state that occupies the role for the population does not occupy it for him.

VI

We may say that X is in pain simpliciter if and only if X is in the state that occupies the causal role of pain for the *appropriate* population. But what is the appropriate population? Perhaps (1) it should be *us*; after all, it's our concept and our word. On the other hand, if it's X we're talking about, perhaps (2) it should be a population that X himself belongs to, and (3) it should preferably be one in which X is not exceptional. Either way, (4) an appropriate population should be a natural kind—a species, perhaps.

If X is you or I—human and unexceptional—all four considerations pull together. The appropriate population consists of mankind as it actually is, extending into other worlds only to an extent that does not make the actual majority exceptional.

Since the four criteria agree in the case of the common man, which is the case we usually have in mind, there is no reason why we should have made up our minds about their relative importance in cases of conflict. It should be no surprise if ambiguity and uncertainty arise in such cases. Still, some cases do seem reasonably clear.

If X is our Martian, we are inclined to say that he is in pain when the cavities in his feet are inflated; and so says the theory, provided that criterion (1) is outweighed by the other three, so that the appropriate population is taken to be the species of Martians to which X belongs.

If X is our madman, we are inclined to say that he is in pain when he is in the state that occupies the role of pain for the rest of us; and so says the theory, provided that criterion (3) is outweighed by the other three, so that the appropriate population is taken to be mankind.

We might also consider the case of a mad Martian, related to other Martians as the madman is to the rest of us. If X is a mad Martian, I would be inclined to say that he is in pain when the cavities in his feet are inflated; and so says our theory provided that criteria (2) and (4) together outweigh either (1) or (3) by itself.

Other cases are less clear-cut. Since the balance is less definitely in favor of one population or another, we may perceive the relativity to population by feeling genuinely undecided. Suppose the state that plays the role of pain for us plays instead the role of thirst for a certain small subpopulation of mankind, and vice versa. When one of them has the state that is pain for us and thirst for him, there may be genuine and irresolvable indecision about whether to call him pained or thirsty—that is, whether to think of him as a madman or as a Martian. Criterion (1) suggests calling his state pain and regarding him as an exception; criteria (2) and (3) suggest shifting to a subpopulation and calling his state thirst. Criterion (4) could go either way, since

mankind and the exceptional subpopulation may both be natural kinds. (Perhaps it is relevant to ask whether membership in the subpopulation is hereditary.)

The interchange of pain and thirst parallels the traditional problem of inverted spectra. I have suggested that there is no determinate fact of the matter about whether the victim of interchange undergoes pain or thirst. I think this conclusion accords well with the fact that there seems to be no persuasive solution one way or the other to the old problem of inverted spectra. I would say that there is a good sense in which the alleged victim of inverted spectra sees red when he looks at grass: he is in a state that occupies the role of seeing red for mankind in general. And there is an equally good sense in which he sees green: he is in a state that occupies the role of seeing green for him, and for a small subpopulation of which he is an unexceptional member and which has some claim to be regarded as a natural kind. You are right to say either, though not in the same breath. Need more be said?

To sum up. Armstrong and I claim to give a schema that, if filled in, would characterize pain and other states a priori. If the causal facts are right, then also we characterize pain as a physical phenomenon. By allowing for exceptional members of a population, we associate pain only contingently with its causal role. Therefore we do not deny the possibility of mad pain, provided there is not too much of it. By allowing for variation from one population to another (actual or merely possible) we associate pain only contingently with its physical realization. Therefore we do not deny the possibility of Martian pain. If different ways of filling in the relativity to population may be said to yield different senses of the word "pain," then we plead ambiguity. The madman is in pain in one sense, or relative to one population. The Martian is in pain in another sense, or relative to another population. (So is the mad Martian.)

But we do not posit ambiguity ad hoc. The requisite flexibility is explained simply by supposing that we have not bothered to make up our minds about semantic niceties that would make no difference to any commonplace case. The ambiguity that arises in cases of inverted spectra and the like is simply one instance of a commonplace kind of ambiguity—a kind that may arise whenever we have tacit relativity and criteria of selection that sometimes fail to choose a definite relatum. It is the same kind of ambiguity that arises if someone speaks of relevant studies without making clear whether he means relevance to current affairs, to spiritual well-being, to understanding, or what.

VII

We have a place for commonplace pain, mad pain, Martian pain, and even mad Martian pain. But one case remains problematic. What about pain in a being who is mad, alien, and unique? Have we made a place for that? It seems not. Since he is mad, we may suppose that his alleged state of pain does not occupy the proper causal role for him.

Since he is alien, we may also suppose that it does not occupy the proper role for us. And since he is unique, it does not occupy the proper role for others of his species. What is left?

(One thing that might be left is the population consisting of him and his unactualized counterparts at other worlds. If he went mad as a result of some improbable accident, perhaps we can say that he is in pain because he is in the state that occupies the role for most of his alternative possible selves; the state that would have occupied the role for him if he had developed in a more probable way. To make the problem as hard as possible, I must suppose that this solution is unavailable. He did *not* narrowly escape being so constituted that his present state would have occupied the role of pain.)

I think we cannot and need not solve this problem. Our only recourse is to deny that the case is possible. To stipulate that the being in this example is in pain was illegitimate. That seems credible enough. Admittedly, I might have thought off-hand that the case was possible. No wonder; it merely combines elements of other cases that are possible. But I am willing to change my mind. Unlike my opinions about the possibility of mad pain and Martian pain, my naive opinions about this case are not firm enough to carry much weight.

VIII

Finally, I would like to try to preempt an objection. I can hear it said that I have been strangely silent about the very center of my topic. *What is it like* to be the madman, the Martian, the mad Martian, the victim of interchange of pain and thirst, or the being who is mad, alien, and unique? What is the *phenomenal character* of his state? If it *feels* to him like pain, then it *is* pain, whatever its causal role or physical nature. If not, it isn't. It's that simple!

Yes. It would indeed be a mistake to consider whether a state is pain while ignoring what it is like to have it. Fortunately, I have not made that mistake. Indeed, it is an impossible mistake to make. It is like the impossible mistake of considering whether a number is composite while ignoring the question of what factors it has.

Pain is a feeling.⁴ Surely that is uncontroversial. To have pain and to feel pain are one and the same. For a state to be pain and for it to feel painful are likewise one and the same. A theory of what it is for a state to be pain is inescapably a theory of what it is like to be in that state, of how that state feels, of the phenomenal character of that state. Far from ignoring questions of how states feel in the odd cases we have been considering, I have been discussing nothing else! Only if you believe on independent grounds that considerations of causal role and physical realization have no bearing on whether a state is pain should you say that they have no bearing on how that state feels.

⁴ Occurrent pain, that is. Maybe a disposition that sometimes but not always causes occurrent pain might also be called "pain."