MATERIALISM IN THE PHILOSOPHY OF MIND

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Materialism — which, for almost all purposes, is the same as physicalism — is the theory that everything that exists is material. Natural science shows that most things are intelligible in material terms, but mind presents problems in at least two ways. The first is consciousness, as found in the 'raw feel' of subjective experience. The second is the intentionality of thought, which is the property of being about something beyond itself; 'aboutness' seems not to be a physical relation in the ordinary sense.

There have been three ways of approaching these problems. The hardest is eliminativism, according to which there are no 'raw feels', no intentionality and, in general, no mental states: the mind and all its furniture are part of an outdated science that we now see to be false. Next is reductionism, which seeks to give an account of our experience and of intentionality in terms which are acceptable to a physical science: this means, in practice, analysing the mind in terms of its role in producing behaviour. Finally, the materialist may accept the reality and irreducibility of mind, but claim that it depends on matter in such an intimate way more intimate than mere causal dependence — that materialism is not threatened by, the irreducibility of mind. The first two approaches can be called 'hard materialism', the third 'soft materialism'.

The problem for eliminativism is that we find it difficult to credit that any belief that we think and feel is a theoretical speculation. Reductionism's main difficulty is that there seems to he more to consciousness than its contribution to behaviour: a robotic machine could behave as we do without thinking or feeling. The soft materialist has to explain supervenience in a way that makes the mind not epiphenomenal without falling into the problems of interactionism.

1 From epiphenomenalism to functionalism

Would-be materialists in the latter part of the nineteenth century tended to be epiphenomenalists. They believed that the world was a physical machine, but felt obliged to concede that examination of its

machinery, however minute, could never uncover nor explain consciousness. Consciousness was, therefore, an inexplicable left-over (see EPIPHENOMENALISM). Materialism in the twentieth century has largely been concerned to provide a more integrated form of physicalism. The attempt has taken 'hard' and 'soft' forms.

The source of all forms of contemporary hard materialism is behaviourism, which identifies mental states with facts about how people are disposed to respond to external stimuli (see BEHAVIORISM, ANALYTIC). The essence of mind is not, therefore, something private to the subject, but something public and observable, a logical product of the relation of stimulus to response. Two fundamental problems plague behaviourism. A phenomenological objection is that we can supposedly tell just from being conscious that experience is more than a mere disposition to behave. A formal objection is that one cannot give necessary and sufficient conditions for being in a given mental state solely in terms of stimulus and response. Behaviourists treated the brain as a 'black box' about which the psychologist must not speculate, but the interdependence of our mental states so complicates the relation of stimulus to response that this relation can only be understood with the aid of a model of our inner workings.

The identity theory of mind, which emerged from Australia in the work of J.J.C. SMART (1959) and D.M. ARMSTRONG (1968), was designed to cope with both problems (See MIND, IDENTITY THEORY OF). Armstrong accepted that mental states were dispositions, but identified these, not with abstract relations between stimulus and response, but with the states of the brain that tend to be caused by the appropriate stimulus and to cause the relevant behavioural response. This identifies experience with something occurrent and actual as well as with a disposition. Moreover, by identifying the mind with a complex internal neural structure, it allows mental states to be specified, *not* by any direct relation to stimulus and response but by a complex profile that relates them to stimulus, response *and all* the other mental states that might interact or interfere with their operation.

This theory was influenced by the development of computers and artificial intelligence (see ARTIFICIAL INTELLIGENCE). At first, identity theorists had tended to adopt *type identity,* according to which pain, or imagining the Eiffel Tower, would be identical with the same kind of brain state in every creature with these mental states. It was then argued both that such type identity was implausible and that it was not necessary: just as the same programme can be run on different hardware, the same network of causal relations that constitute the mind could be realized in differently built brains. This is the theory known as functionalism, according to which there is, at most, a token identity between brain and mental states; that is, each mental state is identical with some brain state or other (see FUNCTIONALISM). Some functionalists prefer to weaken the relation further by talking of the mind being *realized in* the brain rather than being identical to it.

2 Functionalism and consciousness

Functionalism is, therefore, either with or without token identity, that development from — or, perhaps, that developed form of — behaviourism, which is designed to give serious weight to inner processes. However, it faces many problems. It is questionable whether functionalism is phenomenologically any better than normal behaviourism. This doubt is expressed in a group of qualia problems, such as the 'inverted qualia' and 'absent qualia' problems. But the essence of 'qualia' worries seems to have become distilled in the 'knowledge argument' (see QUALIA). Take someone lacking a certain sensible capacity from birth — they are completely deaf, for example. Suppose, too, that they have learned all that a completed physical science could tell them about the physical processes and the functional organization of the hearing mechanism: call them 'the Deaf Scientist'. Third, suppose that they then gain their hearing. They would then gain some new knowledge, namely *what it is like to hear, or what sound is experientially like.* As they knew all the physical and functional information before, this kind of knowledge must concern something over and above the physical and functional; so the content of experience is something over and above the physical and functional.

Various strategies can be tried against this argument. First, one might argue that if the Deaf Scientist really did know all the physical and computational information about how hearing worked, they would know

what sounds sound like. But this seems wrong, because a deaf person could not work this out from current science — more of the same physical and computational information (or the same in greater detail, which could be what a completed science gives), does not seem to be the right kind of thing to tell you what the actual experience of hearing is like. So, second, one might argue that what the formerly Deaf Scientist acquires when they find out what sound sounds like is not new knowledge, but a new way of getting a kind of knowledge they already possess; perception and science give you the same information, one directly through the senses, the other in a propositional form. So the difference is like that between getting the information that Tom is bald by seeing him and getting it by reading about him. But neither does this seem right, for though the Deaf Scientist does indeed acquire a new way of getting knowledge when they gain their hearing, they also gain knowledge of what it is like to hear. If this is not to be new knowledge, it would have to be just the same knowledge as they have as a scientist when they know about the relevant brain process, and this it does not seem to be.

At least it is clear that the knowledge they gain by hearing is not cast in the same neurological terms as the scientific information they already knew, so at least new concepts are involved. Does this imply that new information is acquired? It has been suggested that the necessity for different concepts need not mean that what is being presented are different properties of, or different facts about the world. The same property or situation is presented in different ways, as when two concepts have the same property as reference while having different senses (for example, 'blue' and 'the colour of the sky' present the same feature of the world). But unless there is some reductive analysis of how the mental concepts capture the physical properties, such as the functionalist would provide. it is difficult to see why there should be need for new concepts to capture experience, unless it were that they captured different properties from those caught by the physical vocabulary.

Adopting a functionalist account of the mentalistic concepts that actual hearing calls into play is equivalent to admitting that the Deaf Scientist acquires only a kind of 'knowledge how' on coming to hear — that is, they come to be able to respond directly to sounds. This toughly neo-behaviourist view is sometimes seemingly alleviated by saying that what the Deaf Scientist comes to learn is how to imagine, or how to remember, the experience. This does not appear too harshly reductive, for what they come to be able to do does not appear to be mere behaviour. But that is only because we still need an account of the mentalistic notions of imaging, and of remembering what an experience was Re: taking images (memory or otherwise) as basic is no different from taking 'raw feels' as basic. But if these notions are treated in functionalist terms, being finally explained in terms of an ability to say and outwardly do certain things, then the response has become totally reductive and will not convince anyone who thought there was a problem for the functionalist in the first place.

3 Functionalism and matter

It is a largely unexamined assumption of late twentieth-century materialists that the concept of matter, unlike that of mind. is unproblematic. Some philosophers, however, have followed Russell and argued that the conception of the physical world given to us by science is purely functional and formal: science, that is, tells us nothing about the intrinsic nature of anything, only about its behaviour and how to quantify it, and that this alone is an inadequate conception. Qualitative content is given to our conception of the world from the qualia presented in perception, and without that there would be no non-relational and non-formal content to our conception of the world. But functionalism denies that qualia are given in experience and presents the same kind of purely relational conception of experiential states as physical science does of the physical world. If functionalism is correct, we are stuck with a conception of the world which is entirely relational, with no intrinsic content to any of the relata. This may be an incoherent conception.

4 Alternatives to functionalism

One response to the problems faced by these reductive styles of materialism is to abandon the attempt to reduce mental properties and to admit a *dualism of* properties, while prescribing that the mental *supervenes* on the physical in such a tight way that the spirit of materialism is preserved (see SUPERVENIENCE). This tightness would mean that the dependence was more than merely causal, without being analytic, in the way a reductive account would require.

The first problem this theory faces is to give a proper rationale for supervenience. The provision of a simple definition is easy: the mental supervenes on the physical if there cannot be a mental difference or change without a physical difference or change, and the 'cannot' depends on something stronger than a natural law. The problem comes in explaining what this stronger-than-natural necessity is, and why one should believe in it. No generally acceptable account of this seems to have been found. Furthermore, the question remains of whether the matter of the brain is influenced in its behaviour by the supervenient mind. If it is, then the physical system is being influenced by something not itself physical, and this is a species of interactionism. If it is not influenced, then the mind is an epiphenomenon. However, twentieth-century materialism had sought to avoid both interactionism of this kind and epiphenomenalism. (See EPIPHENOMENALISM).

There is another and entirely opposite response to the difficulties of functionalism in accommodating the apparent data of thought and experience, and that is to deny that there are any such data. Various traditions came together to bear exotic fruit: the pragmatist doctrine that one should believe whatever is most convenient overall; the post-positivist tendency to deny the distinction between observation and theory; Wittgenstein's polemic against private data, produce the doctrine that nothing is so plainly revealed in everyday experience that it cannot be overridden by requirements of scientific elegance. Even the seemingly most obvious facts of experience are actually theoretical speculations and can be denied if science is thereby made easier (see ELIMINATIVISM; PRAGMATISM; PRIVATE LANGUAGE ARGUMENT).

Two conceptions of theory seem to be operating in such eliminativism, and they may not always be clearly distinguished. According to one, a theory is any generalization that can be used to provide explanations; according to the other, a theory is something not so blatantly obvious as to be free from revision. This latter, of course, goes naturally with the observation-theory distinction that the eliminativist rejects. But there are many explanatory principles that are totally beyond revision; for example, that wood generally floats, that pigs cannot fly and that cutting off someone's head kills them. Any higher-order theory that contradicted any of these would be false. Perhaps the use of the term 'folk psychology' to characterize our normal psychological generalizations makes them seem more like folklore - more like the belief that comfrey boiled in holy water relieves rheumatism — than they are like the belief that pigs cannot fly. It seems plausible, however, that the law that we shout out because of pain, or eat because we feel hungry, belongs more with the pigs than the comfrey.

5 Cognitive science and intentionality

The development of Artificial Intelligence tended to switch philosophers' attention from sensation to cognition and, hence, to intentionality. The assumption has been that human behaviour is driven by computational activity in the brain. Two kinds of question have been raised. The first concerns the relation between this computation and the ordinary psychological explanations that we give of behaviour — rather coyly described as 'folk psychology', (see §4 above; FOLK PSYCHOLOGY; REDUCTIONISM IN THE PHILOSOPHY OF MIND). The other is more directly concerned with the problem intentionality poses for materialism. The language of a computer program works entirely as a formal syntax, and brain states, considered simply as biochemical, have no intrinsic meaning; how, then, does neural computation come to have semantic content? Everyone seems to agree that it must be in virtue of the functional relations inner representations have to their typical causes and their behavioural effects, possibly considered in relation to the wider environment and the evolutionary process that produced them (see FUNCTIONALISM §7). The details of this functional account are disputed, but the main problem is that it is entirely externalist (see CONTENT: WIDE AND NARROW). If one thinks of consciousness as something that goes on 'in the

head', and that one's own consciousness of one's thoughts is consciousness of one's internal representations, and if those representations have meaning because of the *external* relations they stand in to the world outside the head, then it looks as if consciousness will not reveal to one the contents of any of one's thoughts, nor, indeed, o any kind of mental representation. For purposes, we will be in the situation of Searle in his 'Chinese room', inspecting symbols we do not understand (see CHINESE ROOM ARGUMENT).

Tyler Burge (1988) has tried to answer this objection to externalism. He says that the holding of the external relations is an *enabling condition* for the representation to have meaning, but that knowing something - in this case the meaning — does not involve explicit knowledge of all the enabling conditions. So we can know the contents of our own thoughts although we do not know the relations that give them their content. The problem with this reply is that, although it is true that we do not, in general, need to know all the things that make something possible in order to know the thing itself, the external relations seem not to be just enabling conditions, but to constitute the content itself Searle's thought experiment seems to show how ignorance of them actually constitutes ignorance of the meaning of the representations.

6 Materialism and abstract objects

Although materialists are mainly concerned with problems that flow from the philosophy of mind, abstract objects constitute a much less discussed but serious problem. If one believes that it is an irreducible fact that there are any or all of numbers, universals, properties, sets or propositions, then one believes there are things which are not material particulars. It might be that one did not mind adding such light baggage as abstract objects to one's otherwise materialist - ontology; but if there are such things as universals and propositions, it looks as if they must enter intimately into our thinking, or, if numbers, into our counting. This would then create a problem for giving a materialist account of these activities, and so accepting abstract objects might have consequences for the philosophy of mind (see ABSTRACT OBJECTS).

7 Materialism at the *fin de siècle*

The materialist mood in the twentieth century has been poised between an almost triumphalist self-confidence and a more modest perplexity. The triumphalism is produced by the success of science, which makes materialism seem obviously true. In this mood, materialists are prepared to deny what seem to be the most obvious facts of mental life if their theory requires it. In a more sombre moment, however, some will confess that all attempts to tackle the problems have so far missed the mark. This more sober tendency became stronger in the 1980s and 1990s. *Nagel (1974)* had already declared that the mind-body problem could only be solved by a conceptual breakthrough we could not, as yet, imagine. *McGinn* (1991) pronounced the problem insoluble in principle because the mind cannot understand itself *Galen Strawson (1994)* has denied that there is any conceptual connection between mind and behaviour. All these philosophers deem themselves to be materialists, of some not-yet-quite-articulable kind. The *Journal of Consciousness Studies* has been set up to 'take consciousness seriously' in a way it is said science has not so far done; but perhaps this underestimates the main reason why consciousness has been sidelined and treated harshly: namely because it seems so clearly impossible to say anything constructive about it within the materialist presuppositions of natural science.

References and further reading

* Armstrong, D.M. (1968) *A Materialist Theory of the Mind,* London: Routledge & Kegan Paul. (A classic — full of lucid philosophical argument.)

* Burge, T. (1988) 'Individualism and self-knowledge', *Journal of Philosophy 85* (11): 649-63. (One of a series of pieces by Burge defending externalism. In this one he makes wide use of the notion of enabling conditions.)

Churchland, P.M. (1984) *Matter and Consciousness,* Cambridge, MA: MIT Press, 2nd edn. (An excellent general account of all the basic 'isms'.)

— (1989) *A Neurocomputational Perspective*, Cambridge MA: MIT Press. (The most thorough-going and consistent eliminativist collection of papers.)

Dennett, D. (1990) *Consciousness Explained,* Harmondsworth: Penguin. (The opposite pole to Armstrong in philosophical style: an entertaining and provocative attempt to use science to bypass the philosophical problems.)

Foster, J. (1991) *The Immaterial Self,* London, Routledge. (A powerful attack on all forms of materialism.)

Hale, B. (1987) *Abstract Objects,* Oxford, Blackwell. (A defence of the irreducibility of abstract objects.)

Jackson, F. (1982) 'Epiphenomenal Qualia', *Philosophical Quarterly* 32 (127): 27-3 36. (The classic source for the 'knowledge argument'.)

Lockwood, M. (1989) *Mind, Brain and the Quantum,* Oxford, Blackwell. (Is worried by the purely relational scientific conception of matter and makes a serious attempt to rehabilitate Russellian neutral monism as a means to saving materialism. Excellent account of modem science.)

McGinn, C. (1991) *The Problem of Consciousness,* Cambridge, MA and Oxford: Blackwell. (Chapter I contains the author's reason for thinking that the mind-body problem is insoluble He argues, however, that this is not a disturbing conclusion.)

* Nagel, T. (1974) 'What is it like to be a bat?', *Philosophical Review* 83 (4): 435-50. (This article achieved great fame by elegantly reminding US philosophers that there was such a thing as subjectivity.)

Papineau, D. (1993) *Philosophical Naturalism,* Oxford: Blackwell. (This contains a well-worked-out version of the teleological-cum-evolutionary theory of representation.)

Robinson, H. (1982) *Matter and Sense,* Cambridge: Cambridge University Press. (A general critique of materialism. Chapter 7 is concerned with problems in the concept of matter, especially the relational versions to which materialists seem forced.)

* Searle, J. (1980) 'Minds, brains and programs', *Behavioural and Brain Sciences* 3 (3): 417-24. (Contains the 'Chinese room' argument, followed by criticisms and a reply.)

— (1992) *The Rediscovery of the Mind,* Cambridge, MA and London: MIT Press, (A lucid statement of the view that the emergence of mind is not a problem for materialism, because emergence occurs at all levels in nature.)

Shoemaker, S. (1984) *Identity, Cause and Mind,* Cambridge: Cambridge University Press. (Perhaps the most rigorous development of analytical functionalism. Chapters 10 and 11 defend the view that all properties are individuated causally.)

Smart, J.J.C. (1959) 'Sensations and brain processes', *Philosophical Review* 68 (2): 141-56. (Important for popularizing the idea that awareness of one's own experience is grasping an inner state *topic neutrally,* under the aspect of its causal relations to a stimulus.)

Smith, A.D. (1993) 'Non-reductive physicalism?" in H. Robinson (ed.) *Objections to Physicalism,* Oxford: Clarendon Press, 225-50. (A clear discussion of the problems of supervenience and of the emergence of the kind favoured by Searle.)

* Strawson, G. (1994*) Mental Reality,* Cambridge, MA: MIT Press; London: Bradford Books. (An onslaught against any supposed conceptual connection between minds and behaviour.)