

Philosophy of Mind

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THE problems and interests that characterize the philosophy of mind derive from an uneasy relationship that has evolved between the way modern science represents physical reality and that special sense we have of ourselves as conscious beings. Since the time of Galileo, it has been accepted that the scientific laws that govern nature can be formulated in mathematical terms. And it has become virtually axiomatic that such laws provide the key to understanding the nature of everything in the physical world. But, intuitively, mental processes seem to resist explanations cast in mathematical terms. Our thoughts and desires, our perceptions of sights and sounds, our emotional states and bodily pains, all these seem incapable of receiving full and fair treatment at the hands of a science that expresses its results in terms of mathematically formulable laws.

Descartes was the first to articulate this problem, though he coupled it with a particularly extreme solution that few, since the seventeenth century, have accepted. On Descartes' view, all mental processes take place in mental substances that are literally distinct from any object in the physical world; every conscious creature is actually a nonphysical conscious substance connected only by way of causal interactions to a particular body. This extravagant view was, in part, a result of Descartes' peculiar version of the thesis that nature operates in ways that are essentially mathematical. For he gave central importance not to scientific laws, as such, but to the essential properties of things. He therefore postulated spatial extension as the sole essential property of physical reality, a move that caused striking difficulties in his physics, difficulties which

eventually came to seem inescapable. Thinkers since Descartes have sought instead to capture the mathematical character of nature primarily by way of natural laws, not essential properties.

This more sophisticated way of representing the mathematical character of nature allows far more flexibility than Descartes had in what one can say about mental processes. If there is more to physical objects than merely their geometrical properties, then perhaps some physical objects—for example, those which exemplify suitably advanced forms of life—actually have, as aspects, various conscious processes. These processes might still seem to stand outside the physical order; for mathematically formulated laws would still seem incapable of doing justice to the feel of a pain, the content of a thought, the sensuous quality of seeing red, or the experience of a desire. At the same time, human beings do exist in the physical world and are subject to the laws of nature. How to incorporate mental processes, in all their rich distinctiveness, within a natural realm that we understand primarily in mathematically formulable terms is the principal concern that defines the philosophy of mind.

Because of this, Descartes' thought has played a somewhat unusual role in subsequent work. Though almost nobody has endorsed his theory of minds as being independent substances, his assumption that mental processes somehow stand apart from the rest of nature has continued to be the focus of almost all later thought. Depending on their attitude toward this assumption, writers have sought to explain how and why mental processes resist treatment in physicalist and naturalistic terms, or to explain how, despite appearances, mental processes actually are susceptible to such treatment.

The prevailing style of nineteenth-century philosophical work generated a number of elaborate systematic answers, most of them implausible, to the question of how mind fits with the rest of nature. This proliferation of systems was eventually halted by the largely salutary impact of the logical

empiricism that dominated much work in the first half of this century. But one by-product of logical empiricism was a conceptual cautiousness that led to the temporary suspension of work devoted to questions about mind. The main cause of resurgence of active interest in those issues was the publication in 1949 of Gilbert Ryle's influential and seminal book, *The Concept of Mind*. Ryle's provocative argument was that there is in fact no need to figure out how minds fit with the rest of nature, for describing people in mental terms is simply not on a par with descriptions of physical reality. Trying to fit both into a single framework is therefore a conceptual blunder; it is to compare conceptual incommensurables. Ryle developed this thesis with force and care, and many of his detailed discussions remain among the most impressive available.

Contemporary work since Ryle's book falls fairly naturally into three more-or-less-distinct periods, each dominated by a particular problem about mind and physical reality. The first of these received its principal impetus from Ryle and from related work by Ludwig Wittgenstein, P. F. Strawson, Stuart Hampshire, Norman Malcolm, and G. E. M. Anscombe. The Cartesian idea that mind somehow stands apart from the rest of nature seems to imply that the occurrence of conscious events can, in principle, be known only by the person who has them. For I can tell about the mental states of another only by relying on observations, and observations can tell me only about physical events. The problem about mind and physical reality is thus embodied in a problem about how we can know about the mental states of others. In its most stark terms, the problem is whether knowledge of other people's mental states is possible at all.

A major burden of most work throughout the 1950s was to argue against such skepticism. Thus Ryle maintained that descriptions of people which use mental terminology are generally statements that simply summarize what the people would do in certain circumstances. And of course observation is frequently sufficient for us to make such projections of possible

behavior. Wittgenstein, in his posthumous *Philosophical Investigations* (1953), forcefully urged that the very idea of a mental state that can, in principle, be detected only by its possessor is incoherent. Strawson (*Individuals*, 1959) and Hampshire (in *Mind*, 1952) gave explanations of our knowledge of the mental states of others, both based essentially on the idea that mental terminology must have the same meaning when we use it to talk about ourselves and to talk about others.

As noted, this focus on our knowledge of other minds was essentially an epistemological embodiment of the traditional concerns produced by the Cartesian picture. But discussions about our knowledge of other minds often seemed more successful when applied to particular kinds of mental states than when applied to mental states generally. Some mental states are characterized by a particular sensuous feel; examples are our pains, tickles, sense impressions of color or taste, and feelings of anger or excitement. Other mental states are characterized not by reference to their sensuous quality but rather on the basis of their being about something, or having some cognitive content. Examples of this kind of mental state are our thoughts, hopes, desires, beliefs, doubts, and intentions. All these mental states are about things, and all have cognitive content that can be captured by means of indirect discourse: a person thinks that, or doubts whether, something is the case. Some types of mental state, of course, have both kinds of characteristic; anger, for example, has a special feel and also is generally about something. Still, one characteristic usually predominates, and we shall distinguish the two sorts of mental state as sensuous and cognitive mental states, respectively.

Cognitive mental states are relatively closely tied to how we act, whereas sensuous mental states are less closely connected with behavior and more intimately tied to bodily stimulations. Because of this difference, discussions about our knowledge of the mental states of others frequently seemed more successful when applied to cognitive mental states than when applied to sense impressions or pains. Observations of behavior may re-

veal nothing about when somebody is in pain or has an afterimage; they will more likely reflect, somehow, the person's beliefs and desires. Moreover, the idea that we have privileged access to our own mental states is far more compelling with sensuous mental states than with our beliefs and desires, which those around us occasionally discern even better than we do ourselves. And, whatever merit Ryle's account had with cognitive mental states, it is indisputably weakest with afterimages and pains; these mental states are surely not dispositions to act in certain ways. Nor did Ryle's attempts to amplify his theory so as to accommodate sensuous mental states seem satisfactory. As increasing attention was given to sense impressions and bodily sensations, therefore, discussions of the other-minds problem seemed more and more to be flawed. Largely because of this, the central focus in the field shifted, in the early 1960s, away from the other-minds problem and onto the so-called mind-body problem. For there were reasons, to be considered shortly, why this shift seemed to promise a more satisfactory treatment of sensuous mental states.

Whereas the other-minds problem is an epistemological problem about our knowledge of the mental states of others, the mind-body problem is a metaphysical problem about the ontological status of mental states, that is, about just what sorts of things mental states are. Since no contemporary writers have championed Descartes' radical view that mental states are states of independent, nonphysical substances, the principal question posed has been whether mental states are themselves some sort of nonphysical states of people or are instead special sorts of physical states. According to contemporary mind-body materialists, mental states are physical states of particular kinds, presumably physical states of the central nervous system. Vigorous discussion flourished, throughout the 1960s and into the 1970s, about whether this thesis can be successfully sustained in the face of various criticisms, criticisms largely based on conceptual considerations. Representative of these discussions are articles by J. J. C. Smart, James W.

Cornman, Jerome Shaffer, Jaegwon Kim, Hilary Putnam, Richard Rorty, Wilfrid Sellars, and David Lewis, collected in *Modern Materialism* (1969), edited by John O'Connor, and in *Materialism and the Mind-Body Problem* (1971), edited by myself. D. M. Armstrong's impressive *A Materialist Theory of the Mind* (1968) has also had considerable influence. One central question in these discussions is whether, for physical states of the requisite sort to be genuinely mental states, they would have to have some mental aspect that would turn out to be nonphysical. Also of concern is whether, if every instance of a mental state is actually a physical state, the various kinds of mental state would also correspond in some natural way to the kinds of physical state.

If mental states are simply special sorts of physical states with no irreducibly nonphysical aspects, the question naturally arises as to whether only biological organisms can have mental states. Perhaps, for example, sufficiently complicated computers could also exemplify those particular physical states which are mental states. And if, in addition, types of mental state correspond in some natural way to types of physical state, perhaps it would be fruitful to try to figure out, in abstract terms at any rate, how human mental processes might be simulated by a suitably elaborate computer. Brain research that suggests an information-processing model of how the central nervous system operates seems to support such speculative investigations, as does some current research in computer science and in cognitive psychology.

These considerations led to the development, in the early 1960s, of an attractive theory that came to be known as functionalism. Pioneered by Putnam and by Jerry A. Fodor (*Psychological Explanation*, 1968) and refined by Lewis and by Daniel C. Dennett (*Content and Consciousness*), functionalism states that types of mental state can be defined by reference to the causal connections each type of mental state has to sensory stimulations, to behavior, and to other mental states, themselves also so defined. This view boasts an important advan-

tage. If the defining character of those physical states which are mental states were expressed, say, in neural terms, it would arbitrarily restrict having mental states to creatures with the right physiological makeup. Yet it seems obvious that beings with radically different physiology from our own could still have the same sorts of mental states. Defining types of mental states functionally explains how this is possible. Moreover, if mental states are defined in terms of causal connections with stimuli, behavior, and other mental states, there can be no principled reason why suitably sophisticated computers could not have mental states. For being in physical states that exemplify these complex causal patterns should be possible not only for various forms of life but also for artifacts that have the necessary colossal versatility of function.

As noted above, the shift of focus from the other-minds problem to the mind-body problem was largely due to the unsatisfactory way in which proposed solutions to the other-minds problem dealt with sensuous mental states. Perhaps one's pains and afterimages are relatively inaccessible to others, at least compared to beliefs and desires. But the close causal ties pains and afterimages have to bodily stimulations encourage the idea that perhaps those mental states are actually only special sorts of physical states. As a strategy for understanding how cognitive mental states fit with the rest of nature, it had seemed promising to study how we know when somebody else thinks or wants something. But that epistemological approach worked poorly with sensuous mental states. Here, the approach that seemed to hold out the most hope was the hypothesis that sensuous mental states are particular kinds of physical states. Investigating the merits of this hypothesis would, in any case, shed light on how sensuous mental states fit with physical reality.

Much of what was written while the other-minds problem was in its ascendancy was in the style of so-called ordinary-language philosophy. This methodology, which flourished in England from the 1930s into the 1960s, relied heavily on our

common-sense views of things, as expressed in our ordinary ways of talking about them. Such considerations were well suited to investigations of what we know about the mental states of others and how we know it. But the ramifications of the mind-body problem raised issues that are less readily expressed in ordinary idiom. Questions arose about what is involved in a mental state's being identical with some physical state, whether that identity is necessary or contingent, and what technical apparatus can best capture the functional definitions of mental states. Elaborate accounts of mental qualities were invented and revised in an effort to deal with the anti-materialist objection that, even if mental states are special sorts of physical state, those states must still have some nonphysical aspect. Discussions of the mind-body problem have therefore tended to rely on a mix of ordinary-language insights and more technical considerations deriving from formal logic and artificially constructed languages. Indeed, for more-or-less-independent reasons, the decline of ordinary-language work, and its replacement by investigations that appeal to this combination of considerations, roughly coincided with the shift from the other-minds problem to the mind-body problem as the central focus in philosophy of mind.

Three largely independent factors have now led, in turn, to a shift away from the mind-body problem as the central concern of active work in the field. One factor was the joint effect of several vigorous attacks on mind-body materialism. Though these attacks persuaded few materialists to abandon their view, they each presented a powerful challenge to the hope that materialism could help us understand the relation of mental states to the rest of nature. In several subtle articles (the first in *Experience and Theory*, 1970), Donald Davidson argued that every instance of a mental state is also an instance of some physical state. But he drew this conclusion from his argument that no scientific laws are possible that could connect mental states, as such, with other physical states. Types of mental state would therefore correspond in no useful or informative way

to types of physical states. In lectures given in 1970 (and published in *Semantics of Natural Language*, 1972), Saul A. Kripke argued that not even individual instances of mental states could be physical. Kripke's argument was essentially that mental states could not be particular physical states without their necessarily being those physical states. And, intuitively, no necessary connection seems to hold between mental states and any sort of physical state. Finally, in a powerfully articulated paper (in *The Philosophical Review*, 1974), Thomas Nagel argued that the hypothesis that mental states are physical is not even genuinely intelligible, at least given anything like our current conceptual resources. Davidson's argument was restricted to cognitive mental states, while Kripke's and Nagel's concerned sensuous mental states. But the cumulative impact of all three was substantial.

These assaults made it seem increasingly doubtful that one could learn much about the place of mind in nature from debates about mind-body materialism, no matter how that issue was eventually resolved. At around the same time, two additional factors contributed to such doubts. If a materialist solution to the mind-body problem is to enhance our understanding of how pains and afterimages fit with the rest of nature, that solution must in some way come to terms with the distinctively sensuous qualities of these mental states. For otherwise materialist theories would not be theories about genuinely mental states at all, but only theories about mere physical surrogates. But, as Rorty and Nagel have remarked, these theories have continued to be cast in reductionist terms that seem to dispense with what is distinctively mental about mental states rather than to deal with it. The functionalist brand of materialism had seemed to hold the greatest promise of giving an adequate account of what is distinctively mental about mental states. But the strengths of functionalist accounts are far better adapted to dealing with cognitive mental states, such as beliefs and desires, than with such sensuous mental states as pains and afterimages. The hope materialism had

held out for dealing more effectively with sensuous states than had discussions about knowledge of other minds come, to many, to seem somewhat hollow.

Finally, increasing attention has come to be given to a range of questions, and to a variety of kinds of phenomena, which were formerly neglected or even ignored. The standard examples of mental states had been thoughts, desires, beliefs, afterimages, and pains. During the early 1970s, interest grew in the emotions and in the nature of consciousness itself. Discussions by Harry G. Frankfurt (in *The Journal of Philosophy*, 1970) and others began to distinguish the question of what is involved in being a person from the question of what it is simply to have mental states, and to consider the relationship between being a person and having a conscious self. Consequent interest has arisen in the mental states of nonhuman animals and in connections and continuities that hold between our psychological makeup and our biological makeup. Speculation about such connections was also inspired by Noam Chomsky's powerfully presented hypothesis that our ability to learn language relies on distinctively psychological mechanisms, amounting to tacit knowledge of grammar, which are embodied in our biological makeup. And Nagel and others have investigated what light might be shed on what it is to be a person or a conscious self by recent fascinating studies of people whose cerebral hemispheres have been surgically severed. As it became evident that an adequate theory must deal with a complex range of mental phenomena, simply determining whether mental states are physical came to seem less likely to illuminate the relation of mind to the rest of nature.

Work in philosophy of mind is today more diversified than in the 1950s, 1960s, and early 1970s. This is due not only to active interest in a greater range of mental phenomena but also to a sense that no single problem, such as the mind-body or other-minds problem, is central to the field. Nonetheless, common traits in current work are discernible. Discussions now tend to manifest greater concern to do justice to the

mental phenomena under consideration. For example, with little exception, nobody still champions the reductive materialist accounts of mental states that dealt so cavalierly with the distinctively mental character of those states.

Taking particular care to characterize mental phenomena accurately is not new in recent work. Most writing about the other-minds problem, deploying then-fashionable techniques of ordinary-language analysis, was especially strong in giving close attention to the nature of mental phenomena. But, as a rule, that attention remained subservient to the goal of coming to grips with the other-minds problem. Today it is increasingly recognized that, without accurate accounts of the phenomena, no effort to deal with the mind-body or other-minds problem is likely to meet with much success. Moreover, interest in related scientific disciplines, such as cognitive psychology, computer science, and the physiology of perception, has resulted in attempts to give such accounts based on more than just linguistic analysis, though substantive input from these disciplines is still more a programmatic ideal than a reality. A few writers, perhaps most notably Sellars and Roderick M. Chisholm, have all along been at pains to base their discussions on careful and revealing characterizations of mental phenomena. Moreover, both were among the few who attempted to do justice both to cognitive and to sensuous mental states, and whose penetrating work illuminated the important differences between the two types. But only recently has this "characterization problem" come to be felt as having central importance.

This growing concern with accurately characterizing mental phenomena is present in the work of writers of otherwise diverse persuasions, and it has led to highly divergent results. Sydney Shoemaker, for example, has tried to help redeem the promise of functionalism by showing how that theory can be extended so as to do justice to sensuous mental states (in *Philosophical Studies*, 1975). Rorty has argued, in the opposite direction, that no view that does not actually rule out mental

states' being physical can capture the distinctive mental quality of those states. But he also urges that the spirit of materialism can be vindicated by showing that mental terminology is, in principle, unnecessary for a full description and explanation of everything in our lives (*Philosophy and the Mirror of Nature*, 1979). Dennett, in a series of provocative articles (*Brainstorms*, 1978), has in a way combined both these tactics. For he urges that functionalism can do justice to as much of our common-sense conception of mental phenomena as is worth saving, and that science may show us that the remainder is incoherent or otherwise expendable.

Many earlier discussions had proceeded as though the longer the problem of characterizing the mental could be postponed or finessed, the better. And accounts that were offered generally proved unhelpful because they seemed to be designed more to support particular positions than to give unbiased accounts of the phenomena under investigation. Growing recognition of both the necessity and the fruitfulness of facing the "characterization problem" head-on is evident in Fodor's *The Language of Thought* (1975), articles in Nagel's *Mortal Questions* (1979), Zeno Vendler's *Res Cogitans* (1972), and in recent articles by Colin McGinn, Gareth B. Matthews, and others.

One salutary outcome of this growing focus on doing justice to mental phenomena is a realignment of some of the issues that define central disagreements in the field. For example, one way to portray mental phenomena is as constituting a largely autonomous, self-enclosed system of processes, which are somehow discontinuous with the rest of nature. A different way would instead exploit the continuities between mental processes and others in nature, and seek to capture the distinctiveness of the mental in the context of those continuities. One might have guessed that mind-body materialists would have relied on this second sort of approach. But more recent champions of materialism and functionalism have, instead, implicitly endorsed the first. Indeed, it is probable that

this explains why these writers have so often advocated implausible reductionist accounts of mental phenomena. Their very approach to the problem of characterizing such phenomena made it so difficult to see the mental as in any way part of physical reality that it seemed necessary to water down the mental if materialism was to have any chance of succeeding. Similarly, many earlier attempts to explain how we know about the mental states of others seem to have been heroic efforts to overcome implicit assumptions about the mental which made such knowledge seem difficult or impossible to obtain.

Rather than debate the merits of reductionist accounts of mental phenomena or the basis of our knowledge about other minds, therefore, current work tends to explore more directly the relation of the mental to the rest of nature. And the emerging contrast just mentioned between two approaches toward portraying the mental promises to be a particularly revealing way of framing central issues. For, in perspective, earlier debates seem, at their best, to have been indirect ways of trying to settle which picture of mental phenomena was more accurate and revealing—that which stresses the autonomy and independence of the mental, or that which insists on the fundamental continuities between mental processes and others in nature.

Until recently, most characterizations of mental states proceeded in rather wholesale terms. Cognitive mental states such as thoughts and desires have generally been described, as a group, by reference to their being about things. And, since thoughts and desires can be about things that do not exist—one can think about, or desire to see, Santa Claus—being about things has often been taken to be a matter of bearing some relation to abstract entities, such as concepts or propositions. For the concept of Santa Claus will exist whether or not he does. Sensuous mental states have also been characterized in a wholesale manner. As a group, they are frequently thought to be distinctive by virtue of the unmediated aware-

ness we seem to have of them; our pains and afterimages seem transparent to consciousness, and we seem to have virtually infallible knowledge about them.

These wholesale characterizations have the odd effect of inviting comparison between mental states and our common-sense conception of mathematical entities. For we tend to think of ourselves as having a kind of immediate grasp of the nature of numbers and triangles. And it can be intuitively tempting to think of mathematical entities as transparent to intellectual examination, so that scrutinizing such entities would yield infallible knowledge. Moreover, if having a thought or desire amounts to bearing some relation to an abstract entity, it will seem that thoughts and desires themselves must have an abstract character usually reserved for mathematical objects. The modern conception of physical reality as governed by mathematically formulable laws has made the relation of mind to matter appear problematic. For the mind has come to be the refuge for all the qualities and processes in nature that seem recalcitrant to such laws. But the mathematical model of natural processes seems even to have invaded the sanctuary of the mind; we think about the mental realm itself as being somehow analogous to the abstract, autonomous world of mathematical objects. Nor should this be surprising. Given Descartes' uncompromising insistence on the nonmaterial character of mental phenomena, seeing the mental realm as populated with states that are somehow abstract would seem appealing. Current proliferation of interest in more detailed accounts of the great variety of mental phenomena, and increased attention to the continuities between mental and biological processes, are therefore having an especially beneficial effect on contemporary work. For they are helping to counter, and ultimately dispel, the traditional Cartesian theory of mind, which leaned so heavily on a model of abstract mathematical entities.