Fall 9-1972

The Mind-Body Problem: A Non-Materistic Identity Thesis

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At least two quite distinct problems appear to have been confused under the label "mind-body problem." The first is posed by the alleged fact of mind-body interaction, while the second arises from the purported fact of mind-body parallelism. And the issues are as different as are the senses of "mind" and "body" which they involve.

Interaction. Historically, the mind-body puzzle is part of our Cartesian legacy. It seems not to have arisen in the form we know it during the previous history of Western thought. It is probably because the Greeks had no prevailing conception of a de-spiritualized material world. Although the origins of this conception can be traced at least to Democritus, the view was not "enculturated" until the rise of the "new physics." In the prevailing Aristotelian view, the material world was not exclusively material, since it was animated by final causes. But when this world came to be viewed as nothing but matter in motion, reflective persons were faced with an apparent difficulty. For if, as morality, theology, and common sense all seemed to agree, a person is not merely a physiological machine in the material world of natural science, that is, if a man has a mind as well as a body, and if, through volition, this mind sometimes acts on his body (and vice versa), the question then arises: how is such interaction possible? As Descartes formulated it, the mind-body problem became, above all, the problem of interaction.

Interaction thus became a problem only with the emergence of the "modern" world view, which set up a sharp opposition between the physical and the mental. The physical world was conceived as a closed system in which the amount of energy remained constant, and in which motions occurred according to regular laws undisturbed by any extra-physical influences. When it is further assumed that the human body, which each of us (barring paralysis) experiences to move on the exercise of volition, is a part of the physical world, the difficulty arises as to how interaction is *empirically* possible (i.e., how it is possible without violation of natural laws). Motor volition seems to imply violation of the principle of the conservation of energy, as well as the deterministic principle according

to which physical states have adequate physical antecedents. Every time one moves his finger, it seems that the total amount of energy in the world is increased. Moreover, there seems to be an inherent difficulty in conceiving how something material, such as a limb, can be suddenly set in motion other than by being touched by something else. But how can something nonmaterial, such as a mind, "touch" a body?

Many such difficulties may be ill-founded. But it is undeniable that they have exercised more than a few able minds in recent centuries. From the present historical standpoint, however, it appears that difficulties of this nature have been largely dissipated by the distinction between the physiological organism and the lived body established by phenomenologists such as Sartre[1] and Merleau-Ponty,[2] and by Gestalt psychologists such as Kohler.[3] From this perspective, the problem of interaction arises from confusing the lived body with the organism. The lived body is

not in the world of natural science. It is rather a content of one's "field of consciousness." (We shall return to this concept later. It may suffice now to say that the conscious field contains all objects which one directly experiences, and excludes all those whose existence is known—in the "weak" sense of "knowledge"—indirectly and by inference.)

The distinction between the lived body and the organism is just as inescapable as the distinction frequently made between the perceived star and the astronomer's star. Because photons require time to traverse space, the astronomer's star may no longer exist when the perceived star exists in an earthly field of consciousness. Also, the perceived star has sense properties (Locke's secondary ideas) such as visual brightness, whereas the astronomer's star, which is known only indirectly and by (nondeductive) inference from what is perceived, has no sense qualities, being invisible matter in motion. If there had been no sentient minds, there never would have been any perceived stars, but there still could have been astronomical stars.

Now if we distinguish in this way between perceived and astronomical stars, so must we distinguish between the lived body and the physiological organism. My physiological hand is known only indirectly and by inference; it is postulated as the normal primary external cause (external to my retina) of my perceived hand. The physiological hand is invisible. It is

analyzable into elementary physical particles, while my lived hand breaks down upon analysis into "sense data," patches of skin-colored surface. The physiological hand reflects photons to the retina, and the stimulation of the retina is followed by a sequence of neural events eventuating in excitation of the occipital lobe. Concurrent with this activity in the occipital lobe, a perceived hand appears in my field of consciousness. And just as the astronomical star might no longer exist when the perceived star exists, so at least in principle the physiological hand might no longer exist when the perceived hand exists. Certainly the distance is shorter from the physiological hand to the retina than from the astronomical star to the retina, but the principle is the same. Certainly there is no likelihood that when I see my hand my physiological hand no longer exists, but the theoretical possibility is there, and that is all that is necessary to set up a sharp distinction between the perceived body and the organism. If one thing can exist while the other does not exist, they must be different things. And, quite apart from the argument based on the time-lapse required for photons to cross space, the phenomenon of the phantom limb is sufficient to establish the distinction.

Once the above distinction is made, any directly experienced mind-body interaction involving volition is seen to occur between two contents of successive fields of consciousness: between the lived body and the active, volitional center of consciousness. Since the lived body is not in the material world of natural science, volition suggests no suspension of the law of the conservation of energy in the material universe. Moreover, since the lived body is not "material" in the required sense, its responsiveness to the causal efficacy of volitional acts raises no problem of how interaction is possible between different types of substance. Finally, the distinction obviates the need for any restrictions on the explanation by natural science of natural events. The movement of one's physiological hand may have a material cause even though the movement of one's perceived hand is partially caused by a volitional act which is in some sense mental.

There is a sense of the term "mind" in which the volitional act and the lived body are both "mental": they are both contents of the "field of consciousness." It is this sense of "mind" that Berkeley invokes when he insists that all the furniture of the earth is in the mind. If we hold on to this sense of the term, there is no special problem of interaction, at least none in the sense in which Descartes is said to have given us such a problem. In his system, the mind-body problem was the logically insuperable

(but morally compelling) problem of bringing mind by the back door into a physical world which, in the first place, had been defined as mindless. But as we now conceive it, the fact of volition implies no such difficulty. What remains is an interesting but not insoluble problem of phenomenological analysis. It is the job of describing with accuracy the ways in which the lived body and the active center of consciousness are experienced to interact. We want to describe, for example, how the body secures the insertion of consciousness in a world, how it enters into one's self-image, or how it sometimes resists volition, as in states of illness or drowsiness. Finally, we want to pay attention to coenesthetic as well as external perception. Such descriptions have been fruitfully initiated by Sartre and Merleau-Ponty.

Parallelism. It might be supposed that the mind-body problem has finally been slain in its metaphysical form. In fact, however, it seems that the above dissolution of the problem of interaction serves only to throw into relief a second problem which has sometimes been confused with the interaction difficulty under the label "mind-body problem." The second problem cannot be reduced to one of phenomenological analysis. It is speculative rather than descriptive. In a word, it is the problem of parallelism. And it arises in the following way.

We have already mentioned that, according to the natural science explanation, the directly perceived star is concurrent with neural activity in the occipital lobe. This concurrence illustrates psycho-physical parallelism. Parallelism is the postulate according to which there is a one-to-one correspondence of states of a person's field of consciousness to brain states. The postulate implies that two qualitatively different states of a person's field of consciousness do not accompany the qualitatively same state of his brain, and that two different brain states are never accompanied by the same state of the field of consciousness. Parallelism does not assert that all brain states are accompanied by states of the mental field, for that would obviously be false. What it does assert is that *when* brain states are accompanied by states of the mental field, to every qualitative difference in the mental state there corresponds such a difference in the brain state, and conversely.

By saying that psycho-physical parallelism is a "postulate," it is meant that, although it cannot be logically or empirically proven, it is a fruitful working hypothesis in psycho-physical research, supported by available empirical evidence in physiological psychology. The correlations tentatively established by physiological psychologists provide some evidence

for parallelism, which thus may be understood as an empirical hypothesis. It is the sort of hypothesis for which not only confirmatory but also disconfirmatory evidence seems possible. No doubt a parallelist might invent epicyclical complications in order to retain his hypothesis in

the face of growing counter evidence, but if after long and careful observation under ideal conditions (e.g., Feigl's auto-cerebroscope[4]) one failed to discover any changes in the brain state associated with changes in the mental state, there would arrive a point where one would have to be an unscientifically dogmatic parallelist not to abandon one's hypothesis.

Nothing yet has been said regarding the *problem* of parallelism. *If* we tentatively accept parallelism as true on the basis of available empirical evidence, the question immediately arises: *why* does the mental series run parallel with a brain series? Assuming a correspondence of the type explained above, why does it occur? Until we find some explanation for parallelism, we seem to have an incredible accident on our hands. As here understood, parallelism is not one of the alternative "solutions" to the mind-body problem. On the contrary, it poses the problem in a very acute form.

The not infrequent confusion of the parallelistic difficulty with that of interaction is indicated by the fact that epiphenomenalism and the double-aspect theory are often presented as alternative "solutions" to the Cartesian problem of interaction.[5] But in fact it is to the problem of parallelism that these two doctrines appear as solutions, however inadequate. Both doctrines deny that interaction in the troublesome Cartesian sense occurs. They are "solutions" only in the sense that materialism, which denies the mental series, is a solution to the problem of parallelism. This is the sense of the term in which a problem's dissolution can be its "solution."

There are different ways in which the mind-body relation posed by interaction can be distinguished from the one posed by parallelism. For one thing, interaction, unlike parallelism, is a relation of alternate action of two terms each on the other. It is not a relation of concurrent mental and physiological events. But the easiest way to distinguish the two relations is to distinguish the different senses of "mind" and "body" which are invoked.

We have already distinguished two senses of "body": the lived body and the physiological organism. It is with the latter sense that parallelism is concerned. However, "mind" is even more ambiguous than "body." At least three meanings may be distinguished: (1) the active, volitional center of consciousness, (2) the total field of consciousness, and (3) the self. The first sense is used when it is said that perceiving a chair is mental, but that the chair directly perceived is not mental. The second sense, as already noted, is suggested when Berkeley says that the entire physical universe exists in a mind. Clearly, the universe does not exist in an act of consciousness. The third sense seems to be used when it is said that the mind is immortal, since both an act of consciousness and a field of consciousness appear to be momentary. In the present context, we are primarily concerned with the first and second senses of "mind." The mind-body interaction discussed above occurs between volitional activity and the lived body. (It will be suggested later that there is a second relation of mind-body interaction, occurring between the field of consciousness and the remainder of the physiological organism. But this interaction poses no special difficulty. In the context of a panpsychist hypothesis, it will be seen as either mind-mind or body-body, rather than as mind-body, interaction. It appears problematic only as does interaction between concrete elements.) Parallelism, on the other hand, concerns the relation between mind as the total field of consciousness and body as brain process. We thus see that

experienced volition and parallelism give us two completely different relations. The entire relation of interaction between the active center of consciousness and the lived body is internal to the mental term of the parallelistic relation.

Before turning to the problem of parallelism, we shall attempt to clarify the concept of a field of consciousness. (The following comments are necessarily restricted. Most significantly, we shall make no attempt in this paper to relate the field of consciousness, conceived as a momentary event, with the self conceived as an enduring subject of actions, rights and obligations.) One's present field of consciousness contains everything of which there is direct awareness, plus the awareness of all this. What it means to be directly aware is perhaps best clarified by examples. The reader is directly aware of the side of the sheet which he is reading, but he is presumably only indirectly aware of the other side of the same sheet. He is directly aware of certain present events, but is only indirectly aware of actual events which occurred ten minutes ago or which will occur ten minutes hence. (Images of the past or future are not actually past or

future.) He is directly aware of his own feelings, but is not aware in this way of anyone else's feelings (at least excluding considerations of ESP). There are many things which might be said about a field of consciousness. For example, one might engage in phenomenological analysis of the act-object structure. However, we shall limit ourselves to a series of points which seem to bear directly upon the solution of the parallelistic problem.

(1) A field of consciousness is not internally related to anything else.[6] In other words, we can logically (i.e., without self-contradiction) assert it to exist unchanged even if we suppose that everything not contained within it does not exist. This point is already admitted by those who claim that solipsism is logically consistent, and that it is not possible to deduce the existence of separate substantial entities (whether matter, other minds or God) from the existence of one's field of consciousness. Let us suppose that a field of consciousness is not essentially independent. Then it is internally related to something not contained within it. But since to be aware of an entity is to be aware, at least tacitly, of all things to which the first is internally related (e.g., one cannot be aware of a left-hand dot as such without also being aware of a right-hand dot), the supposition breaks down and becomes self-contradictory: all things internally related to a content of one's field would equally have to be contents of his field.

(2) A field of consciousness is not a collection of externally related elements, but is rather an organic whole of internally related aspects.[7] The argument for this thesis would depend on showing that all individual objects (whether perceptual or imaginary) in a field are internally related to one another, and secondly that they are all internally related to an act of consciousness also contained in the field. For example, suppose one perceives a storefront. This is more than merely having a sense impression of a storefront. One cannot perceive a storefront unless, besides directly sensing a storefront, one imagines a correlative storerear. It is this that explains, in the course of a first visit to a movie village, one's surprise at discovering that there is no storerear. The sensed front and imagined rear are two internally related aspects of the thing perceived. In general, every

object within the perceptual-imaginary field appears to be essentially conditioned by the context consisting of all other such objects in the field. Every individual object of focal awareness is essentially dependent on the entire marginal horizon of awareness. This dependence has been made the subject of close study by the Gestalt psychologists.[8]

The entire perceptual-imaginary domain is in turn essentially dependent on an act of perceptual-imaginative awareness. To perceive is not merely to receive sensations passively. It is also to judge. Because perception is active as well as passive, the thing perceived is essentially relative to the perceiving of it. For example, no one who entered for the first time a modern Western environment would be able to perceive a typewriter, since due to his lack of previous experience he would be incapable of responding to sensation with the same interpretative judgments of which the rest of us are capable. He could only perceive a thingamajig.

(3) A field of consciousness is individual (rather than universal). This point by itself is trivial compared to the first two. The reason for making it is that, in conjunction with the first two points, it permits the conclusion that a field of consciousness is a substantial entity, where "substantial entity" means an essentially independent and indivisible (i.e., noncollective) individual. This concept of substance is related to Aristotle's concept of an ultimate subject of predication (exemplification) which is not "present in" (essentially dependent upon?) anything apart from itself.[9] A main difference is that Aristotle allowed that the parts of a substance (e.g., a hand) could themselves be substances.[10] Thus an Aristotelian substance is not necessarily indivisible. On the issue of indivisibility, the present conception is closer to that of the atomists, and to the Leibnizian notion of a monad.[11] They denied substantial change in nature, but they at least agreed with Aristotle in viewing a substance as a continuing subject of accidental change. However, if, with Leibniz and the atomists, we introduce indivisibility as an essential condition of substantiality, then we deprive ourselves of any right to regard a substance as a subject of change. This is the point which I should like to stress at present.

Change presupposes the reality of time, of temporal succession. This means that there can be no (temporally) indivisible subject of change.

Events in time are externally related to one another, since if they were internally related they would be simultaneous rather than successive. One thing is internally related to another only if it is what it is through the other, so that when the other does not exist it cannot itself exist. Now if a substance, in the sense of an essentially independent, indivisible individual, were a subject of change, it would consist in a series of externally related, successive events, and thus would fail to be indivisible. The indivisibility criterion implies that a substance cannot be a collection of simultaneously existing substances. But it is equally implied that it cannot be a collection of successive substantial entities.

If a field of consciousness is a substantial entity, then on the view under consideration it would not endure through time as a subject of change. Two possibilities seem to arise. Either a person's mental life is exhausted by a single indivisible field of consciousness, or it consists in many such momentary fields in succession. In the former case, the experience of temporal succession becomes illusory. Leibniz, who took up this option, struggled unsuccessfully with the problem of

explaining the experience of succession and change on the assumption of the temporal indivisibility of the person. In the last analysis, he was forced to deny the reality of time, and to say that one's future is not really future, that it is really present, although dimly perceived.[12] In our own century, Russell and Whitehead, encouraged by the emerging quantum view of reality in physics, developed the second alternative, a serial view of reality which preserves temporal succession as nonillusory. Solipsism of the present moment may well be logically irrefutable. But the Russell-Whitehead option suggests that, instead of viewing this conclusion as the frustration of epistemological aspirations (e.g., to prove the existence of the eternal world), we ought to view it as the fulfillment of ontological aspirations. For if solipsism of the present moment is not logically irrefutable, then one's present field of consciousness is an essentially independent actual entity.

(4) A field of consciousness is private. In other words, one person has no direct awareness of the contents of another's field. In the last analysis, experience is not public. One is aware of another's field only indirectly, whether by deliberate communication or unintended gesture. The very need for communication, in the sense of overt expression of one's experience, strongly suggests the privacy of experience. One person does not always know what another is imagining or feeling until the other expresses himself overtly, and when the other finally expresses himself the first person is sometimes surprised. If we were directly aware of one another's field, this surprise would be difficult to explain.

Privacy does not mean that human experience is not social. On the contrary, what seems to distinguish a field of *human* consciousness is that different standpoints are in communication within it. It exhibits intra-personal, ego-alter ego dialogue.[13] However, this socialization of the field does not mean that the field is literally public (i.e., open to direct acquaintance by different persons). All it implies is consciousness' empathetic adoption of the standpoint of another private center of conscious activity.

(5) A field of consciousness occupies a region of "physical space" (as contrasted with "phenomenal space").[14] This point is far from trivial. It goes counter to the entire Cartesian tradition, which insists that mind is unextended. Physiological theory seems to place the field of consciousness "in the brain." For example, visual sensation does not occur with retinal stimulation, but rather with activity in the occipital lobe. What suggests this general view is that direct stimulation of the brain produces sensation without any peripheral stimulation, while peripheral stimulation is inadequate if neurons to the brain are severed. The sensory contents of one's perceptual field are presumed to be caused by the action of afferent neural impulses, but an impulse, by moving through space, can cause a change of state in an actual entity, it seems, only if the entity on which it acts is also in space.

However, the view that the mental field is in the brain has frequently raised the objection that it requires one to hold that his entire directly perceived world is inside his head, whereas it is a patent fact of experience that his head is really only one perceptual object alongside others. A way around this difficulty is to see the difference between one's head

and one's brain. The difference is as great as that between any object of direct perception and the unperceived theoretical entity postulated by natural science. One's field of perception is located in his brain, but his head is one of the contents of that field. When one looks in the mirror, his head enters into his visual field, which is a content of his field of consciousness, which is located where his brain is, which is part of his physiological organism (in contrast to his lived body). No one directly perceives a brain or organism. The question is: are these systems of natural science merely theoretical constructs which aid in the prediction of phenomena, or do they really exist? This is the well-known controversy between scientific phenomenalism and scientific realism. Ewing writes the following in defense of the realist position:

Practically not scientific or even merely common sense prediction about future perceptions can be made without introducing as an intermediary link between the prediction and the direct observations on which it is based the notion of a physical object existing unperceived…. We have thus in order to make predictions to assume at least that our experience will go on *as if* there were physical objects existing independently of us in the realist sense. This at least we must admit even if we say that independent physical objects are only methodological fictions. But this itself is a very strong argument for their really existing. That experience should persistently go on as if something were true is the strongest empirical argument we can have for its really being true.[15]

If realism with respect to submicroscopic objects were not true, the predictable order of experience might be difficult to explain without recourse to divine intervention. It seems we would have on our hands what Smart calls a "cosmic accident."[16] But if we accept scientific realism, then we are committed to the view that there is a "physical space" besides the "phenomenal spaces" of our various fields of consciousnesses. What is directly perceived in the brain is partly caused by the motion of stimuli impinging on the organism from the outside. But motion implies space. This space cannot be the private perceptual space of one's field of consciousness. It is the space in which unperceived brains, organisms, molecules, and various elementary particles coexist. And if one's field of consciousness

is "in his brain," it follows that our various fields, each with its private visual and tactual spaces, also coexist in this space. The changing contents of my perceptual space are causally explained by supposing that this perceptual space stands in changing spatial relations with other things in physical space. But the field of consciousness is not merely contained in this space. It occupies a definite region of this space. For if it is in this space, it cannot occupy a mere mathematical point, since then it would be an ideal entity and would not actually exist as a concrete individual. Just as nothing can actually exist in time if it is instantaneous and occupies no measurable duration whatsoever, so nothing can exist as an actual concrete individual in space if it is a mere point and occupies no measurable volume.

Mind-brain-identity. It is perhaps unnecessary to go further in discussing the field of consciousness. Obviously much more could be said. But enough has already been done to pave the way for an explanation of the nonmaterialistic identity thesis which I wish to defend. The thesis may be understood as a solution to the problem of parallelism. Schlick advances us

towards this solution by distinguishing between "three kinds of realms" which have persistently been confused:[17] (1) what he calls "the realities themselves," or, in a more openly Kantian vein, the "things in themselves"; (2) "the quantitative concepts of natural science" which are "applied to these realities," and (3) the "intuitive images through which the quantities in (2) are represented to our consciousness." For example, the electron may be imaged as a particle which is like perceptible bodies, except that as a matter of fact it is very much smaller. But it is clear that the electron, as a "reality" to which the quantitative concepts of physics apply, does not resemble this object of the physicist's imagination. At most, the image functions as a concrete symbol, in the physicist's field of consciousness, of the quantifiable reality, outside his field of consciousness, which causes certain objects of his perception (e.g., cloud chamber tracts). As Schlick says, "naturally (3), here, is a part of (1), that is, a subsidiary part of that part of reality which we call our consciousness." The realities to which natural science concepts apply are "physical" just because these concepts apply to them. But physical concepts tell us nothing, it seems, about what Locke called the "real inner

essence"[18] of the things in themselves. Such concepts are relational. For example, to say that an element possesses force is not to say anything about what it is in itself, but is simply to state its potential accelerating effect on other elements. And to say that an element has mass is simply to say that the force of another is required in order to alter the state of its motion. In other words, natural science concepts are "role" concepts. They define the causal role of the element with respect to other elements, but not the nature of the role-taker apart from the role.

Interaction is an external relation between substantially independent elements. Natural science seeks to determine the laws of interaction, causal laws. It is silent about the internal properties of the substantial realities themselves. But the "things in themselves" *must* have some internal properties. The notion of something with external, relational (causal) properties, but with no internal properties, would be incoherent. In order for something to have accidental properties, it must have essential properties. It must be something. Thus there is something which the physicist cannot as a physicist know about the electron, and something which the physiologist as a physiologist cannot know about brain process. The physiologist's brain process concepts are quantitative natural science concepts referring to a reality outside the physiologist's field of consciousness, a reality which is the primary external cause of certain objects of his direct perception (e.g., encephalograph readings). This reality may be symbolized within his field by the "intuitive image" of a complex material system. But, just as in the case of the electron, there is not likely any qualitative resemblance between this image and the external cause or reality. The image is an essentially dependent content of the physiologist's field, while the external reality, which acts as an efficient cause, is a substantial reality.[19] What is the nature of that reality?

The hypothesis which seems the most plausible is that the reality referred to by brain process concepts is, under normal waking conditions, the field of consciousness of the physiologist's subject. We suppose that the underlying reality is substantial. The subject's field of consciousness is substantial. The rule of parsimony bids us refrain from postulating, à la Kant, an "x" of unknown nature to be this reality, and simply to identify it with the subject's conscious field, which, moreover, we assume

(under normal waking conditions) to exist at the same place in physical space. Two different things cannot simultaneously exist at one place. What a physiologist might know from the outside as my brain process, I intuit from the inside as my conscious field. What the physiologist might know indirectly and in its external causal relations with other things, I know directly and in itself.

Feigl defends a nonmaterialistic identity thesis which is very close to the one presented here, as distinct from the materialistic thesis of Place and Smart. But the positions of Place, Smart, and Feigl all appear burdened with a highly misleading analogy. Feigl says that the mental is related to the physical (i.e., brain process) as table salt is related to NaCl.[20] This is comparable to Place's view that the mind-brain relation is analogous to that between lightning and electrical discharge.[21] The concept of table salt is a phenomenal concept; that is, the table salt is white in color quality, characterized by a particular taste, and so forth; NaCl is its "scientific successor concept."[22] But the analogy to the mind-brain relation seems rather deceptive. Electrical discharge is the partial cause of lightning, which is a phenomenal object. Lightning is what one directly sees in the sky. It is not identical to electrical discharge, which, like the astronomer's star, is never directly seen. In natural science, a cause is never identical with its effect. (If Place does not mean by "lightning" what can be directly seen, he seems to be using the term in a rather unordinary sense, which he should make clear.) Moreover, the electrical discharge is only the partial cause of the perceived lightning, since certain causal conditions are physiological. Finally, the perceived lightning and electrical discharge are differently located in physical space. Because the discharge is only a partial cause; there is no possibility of a parallelism or one-to-one correspondence of lightning events to discharge events. If there had been no organisms, presumably there might still have been discharges, but there would have been no lightning. But the identity theory assumes that there are certain types of brain events which are never unaccompanied by mental states. Thus the relation of the field of consciousness to brain process is quite different from the relation of lightning to electrical discharge, or table salt to NaCl. Indeed, the suggested analogy

seems contradictory. Table salt, as a thing perceived, would have to be identical both to a particular brain state and to NaCl.

Panpsychism. If the nonmaterialistic brain-mind identity thesis is adopted, the physiological organism appears as a system, hierarchically organized, of substantial, interacting elements, one of which is a human field of consciousness. The question then arises: what is the internal nature of the other elements? The speculative hypothesis to which Whitehead and others take recourse is that they are also psychic. To use Bradley's terminology, they are felt wholes. Whitehead uses the metaphor "drops" of experience.[23] It must be admitted that this metaphysical hypothesis does not seem to be testable in any exact scientific sense. Few, however, will want to say that it is cognitively meaningless, since it is only because we understand its meaning that we know that it is untestable, that in conjunction with known facts it does not seem to permit prediction of any directly verifiable statements. Under the circumstances, what sort of specifically metaphysical argument might be advanced?

The argument which seems to me the most promising would be developed along the following lines.[24] We assume that the elements of the physiological system are substantial because they causally interact. (To act as a cause is to act as an indivisible and independent unit of actual existence.) Since Descartes, two types of substance have been in contention: material and spiritual. "Material body," we have noted, is ambiguous. In the sense of the phrase where we are directly aware of such bodies, they cannot be substantial entities because they are internally related to one another and to mental acts of judgment. The only type of substance of which we are directly aware is the nonmaterial type: the field of consciousness. Either substantial entities other than the human field of consciousness are of some unknown type, or they, like the conscious field which each of us may intuit as his own, are of the psychic type. Although it is possible that there is some unknown type of substance which is neither material nor psychic (as in, for example, the double aspect theory), it seems more probable that there is not. Since we are directly acquainted with a substantial entity of the psychic type, the more conservative hypothesis would seem to be that the physiological

organism is a system of "atomic spirits," one of which, at the top of the hierarchy, is the human field of consciousness. Once again, application of Occam's razor suggests that we refrain from postulating substances of some unknown type, unless logical and/or factual reasons induce us to do so. I know of no such reasons, and thus conclude, tentatively, that panpsychism is more probably true than false.

Feigl objects to the panpsychist extension of the identity thesis on the grounds that panpsychism is refuted by the very argument from analogy to which panpsychists appeal.[25] They say that as a particular sort of brain process is to the human field of consciousness, so every physical element is related to its underlying or intrinsic reality. But brain process is the most complex physical process known to man. Accordingly, reasoning analogically, we should say that the human field of consciousness is radically different from the intrinsic nature of inanimate physical elements (e.g., an electron).

In reply it may be said that if the brain and inanimate physical elements, despite the wide dissimilarity in degree of organization, are "physical" in a single sense of the term, then both the human field of consciousness and the underlying reality of the electron may be "psychic" in a single generalized sense of the term. But a problem immediately arises. We have a generalized notion of the physical only, it seems, because we know of physical entities at both ends of a continuum of increasing levels and degrees of organization. We know of both electrons and brains, and from such divergent cases we can form a concept of the physical, of what they share in common. But in the case of the psychic, we are acquainted with only one end of the alleged continuum. On the basis of our direct acquaintance with the human field of consciousness, can we generalize to a concept of the "psychic" broad enough to encompass the alleged intrinsic reality of the electron?

Hartshorne writes that "we can generalize beyond human experience only by generalizing 'experience' beyond its human variety."[26] Perhaps the experiential field of an isolated electron can be conceived on the basis of the human field by a process of abstraction or elimination. We may grant that it would not be possible to form a concept of a human field on the basis of a

subhuman field. But just as the adult has at least the possibility of understanding something of the child's mental life (whereas the

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child has no possibility of understanding the adult) so we may be able to conceptualize the nature of experiential wholes simpler than even the child's. Of course, the difficulty is magnified here by the fact that the adult remembers being a child, but not an electron.

In attempting to conceive the inner existence of an isolated electron, one of the characteristics of a human field which would surely have to be eliminated is its differentiation into different sensory modes, such as color and touch. Yet if we are going to speak of the electron as at all "psychic," we must at least attribute some form of sentience to it. The electron would thus exercise a form of primitive feeling undifferentiated with respect to sensory modes. Such differentiation appears empirically impossible apart from an organism in which various sense organs (and corresponding brain centers) are structurally differentiated. According to the Whiteheadian view, a psychic entity is, most generally, the act of feeling an environment. Since the environment consists, for Whitehead, in similar acts, it is a feeling of feelings. It contains, then, at the very least, an act-object structure, a distinction between the act of feeling and what is directly felt. Both aspects are simultaneous, so that neither is causally prior. They are internally related aspects of a single felt whole. In its most primitive form, a mind would be without differentiation into sensory modes. It would be neither recollective nor anticipatory, and it would be capable of neither imagination nor abstract conception. Moreover, insofar as perception presupposes both concept formation and imagination, the most primitive form of psyche would not exhibit perceptual consciousness. And, lacking perception, it would lack a focus-fringe structure. Finally, it of course would not be self-conscious, and would not be capable of intelligent communication with other minds. It would be mind reduced to the bare fact of sentience. (The possibility of nonmodal sentience is suggested empirically by coenesthesia.)

To say that the physiological organism is a system of atomic spirits seems to conflict with the view that the organism is a physical system. But there is really no conflict. The term "physical" is used here to designate anything to which the quantitative concepts of natural science apply. (The ambiguity of "physical" may again be recalled. In the usage presently being invoked, the typewriter directly before me is not physical, as is a molecular system which no one perceives directly.) When we conceive the causal interactions between elements of a system ignoring the internal nature of each element, we have the concept of a physical system. When we conceive the possible interactions of an indivisible element with other

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elements, ignoring the internal properties of that element, we have a concept of an elementary physical particle. But when we conceive the internal nature of an element, ignoring its causal relations (expressible in mathematical formulae) with other elements, then we form a concept of a nonmaterial substance, a spirit or "felt whole." The elements are physical in their external, causal relations, but nonphysical in their internal properties. The organism appears as a physical system of psychic elements.

The mind-matter thesis suggested here is of course a version of the "identity thesis." But it is not a materialistic identity thesis. If we find, as I think we must, that it is impossible to deny the instantiation of psychic attributes (e.g., color qualities, feeling qualities, the qualities of mental acts such as being perceptual or conceptual), then any materialism which claims that nothing can have such attributes seems ruled out. And if materialism is the view that all substantial realities are physical, then the existence of fields of consciousness suffices to refute materialism. But one might suppose that idealism is equally ruled out. For if a brain event (of a particular sort) is identical with a field of consciousness, then it is equally true that the field of consciousness is identical with a brain event. Since the field of consciousness exists, materialism seems clearly false, since matter is conceived so as to exclude certain properties (e.g., subjective sense qualities) found in the field of consciousness. But if the field of consciousness is brain process, then it is also true that no nonphysical substances exist. And if idealism asserts that no substances are physical, then idealism is just as false as materialism. For the only candidates for nonphysical substances, namely the fields of sentience, are, by the identity thesis, after all physical. And the only candidates for physical substances, namely the elements of the world of natural science, are, by the pan-psychist extension of the identity thesis, all of them physical. Thus we get the result both that all substances are physical and that all are psychical. Now it seems that both materialism and idealism are true. How, then, have they come to be viewed as incompatible? But since materialism says there are no psychical substances, and since idealism says there are no physical substances, we also get the result that materialism and idealism are both false.

What we should perhaps say is that they are both true in what they affirm, and false in what they deny. Materialism may be true in saying that all substances are material, but false in saying that none is psychical. Idealism may be true in saying that all substances are psychical, false in

saying that none is material. The error then comes from thinking that a material substance cannot be psychical, and that a psychical substance cannot be material. Actually, all substances may be both psychical and material.

Are we saying, then, that materialism and idealism stand on an equal footing, that neither enlightens us as to the nature of substances more than the other? In the last analysis, the scale seems tipped in favor of idealism by the reflection that materialism insists that all substances are *essentially* material. According to the thesis suggested here, substances are both material and psychical, but whereas they are essentially psychical, they are only accidentally material. They are psychical in their intrinsic natures. They are material only in their external, causal relations with one another. And this is why the present identity thesis is nonmaterialistic. Brain process is essentially psychic, while the field of consciousness is accidentally brain process. One might say that materialism is a contingent truth, while idealism is an essential truth.

There does not seem to be any logical contradiction in the supposition of only one substantial entity, and in a monistic universe such as this there would be no interaction, and thus no matter. But this substance would still, according to the view being outlined, consist in a field of consciousness. A substance is material only insofar as it causally conditions or limits another substance. It is material for another; in itself it is psychical.

There is no reason to hide the problems which any full defense of the present view would entail. Chief among these problems is that of reconciling the view, derived from physics, that the ultimate units of reality are subatomic, with the phenomenologically based view that the field of consciousness is an indivisible unit and the view, based on physiological psychology, that the physiological correlate of the field of consciousness consists in an enormous mass of elementary physical particles. The problem is obvious once we say that the relation between the field of consciousness and its physiological correlate is one of identity. One solution to this difficulty is suggested by the Hartshorne-Whiteheadian concept of a "compound individual."[27] The physiological correlate may

not be merely a mass of particles; it is the most highly organized such mass which we know. There may be a certain threshold degree of organization at which a collection of externally related elements fuses into an indivisible unit of inseparable moments, a "high-level substance."

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Notes

[1]Jean-Paul Sartre, *Being and Nothingness*, trans. H. Barnes (New York: Philosophical Library, 1956), Part III, Ch. II. [2]Maurice Merleau-Ponty, *The Phenomenology of Perception*, trans. Collin Smith (London: Routledge & Kegan Paul, 1962), Part I. [3]Wolfgang Kohler, *Gestalt Psychology* (New York: Liveright, 1947), Chapter I. [4]Herbert Feigl, *The Mental and the Physical* (Minneapolis: Univ. of Minnesota, 1967), p. 14. [5]See, for example, John Hospers, *An Introduction to Philosophical Analysis* (Englewood Cliffs: Prentice-Hall, 1967), pp. 391–404. [6]Internal relations may be defined both ontologically and epistemologically. Ontologically, two things are internally related if, in order for one of them to be, it is "essentially necessary" for the other to be. It is "essentially necessary" in the sense that a "real definition" of one thing includes an affirmation of the other thing's existence. Epistemologically, two things are internally related if, in order adequately to conceive one, it is essentially necessary to conceive the other. Something is "adequately" conceived only when it is conceived "completely"; that is, only when all of its essential properties are conceived. [7]W. James calls this the "law of relativity." See *Psychology: Briefer Course*, Ch. II. [8]See, for example, Aron Gurwitsch, *The Field of Consciousness* (Pittsburgh: Duquesne Univ., 1964). Parts II and V. [9]Aristotle, *Categories*, $2^{a}11$. [10]*Ibid*., $8^{b}15$. [11]Leibniz, *Monadology*, 1. [12]Russell discusses Leibniz's ambivalent rejection of the reality of time in his *Philosophy of Leibniz* (London: George Allen and Unwin, New Ed. 1937), pp. 50–53. Another passage in the same book anticipates the Russell-Whitehead move to an event ontology, to a pluralism of successive as well as simultaneous entities: "There is … in all monadisms, an asymmetry in regard to the relations of things to space and time, for which there is, so far as I know, nothing to urge except the apparent persistence of the Ego. It is held that substances persist through time, but do not pervade space. Difference of spatial position at the same time shows difference of substance, but difference of temporal position does not show this …. For this important assumption there is, in Leibniz, no sort of argument." *Ibid*., p. 128. [13]See G. H. Mead, *Mind, Self and Society* (Chicago: Univ. of Chicago, 1934). [14]On the distinction

between physical and phenomenal space, see Russell's *Outline of Philosophy* (London: George Allen & Unwin, 1927), Ch. VIII. [15]Alfred C. Ewing, "The Causal Argument for Physical Objects," *Proceedings of the Aristotelian Society*, Supplementary Vol. XIX (1945), p. 35. [16]J. J. C. Smart, *Philosophy and Scientific Realism* (London: Routledge & Kegan Paul, 1963), p. 39. [17]Morris Schlick, "Psycho-Physical Identity," trans. from, *Allgemeine Kenntnislehre* in *Perspectives in Philosophy*, 2nd ed., ed. R. N. Beck (New York: Holt, Rinehart and Winston, 1968), pp. 316–18. [18]Locke, *An Essay Concerning Human Understanding*, ed. A. C. Fraser (London: Oxford Univ. Press, 1894), Vol. II, pp. 57 ff. [19]As Leibniz saw, to act is to be a substance. A collection would seem to act only derivatively, through the actions of its indivisible units. Moreover, since the parts of such a unit are inseparable, it seems that each unit can be considered to act only as a whole. [20]Feigl, *op. cit*., p. 141. [21]U. T. Place, "Is Consciousness a Brain Process?" reprinted in *The Philosophy of Mind*, ed. V. C. Chappell (Englewood Cliffs: Prentice-Hall, 1962), pp. 105–06. [22]Feigl, *op. cit*., pp. 141–42. [23]Whitehead borrows the "drop" metaphor from James. See A. N. Whitehead, *Process and Reality* (New York: Macmillan, 1929), p. 105. Also, Whitehead acknowledges the influence of F. H. Bradley's notion of a "felt whole." See *Adventures of Ideas* (New York: Macmillan, 1933), Part II, Ch. XV, Section XI. [24]An argument similar to the one which follows is found in Durant Drake, *Mind and its Place in Nature* (New York: Macmillan, 1925), Ch. VII and Ch. XIII. [25]Feigl, *op. cit*., p. 84. [26]Charles Hartshorne, *Beyond Humanism: Essays in the Philosophy of Nature* (Chicago: Willett, Clark, 1937), p. 122. [27]Hartshorne uses the term "compound individual." See Charles Hartshorne, "The Compound Individual," in *Philosophical Essays for Alfred North Whitehead* (London: Longmans, Green, 1937). See also A. N. Whitehead, *Adventures of Ideas*, Part III, Ch. XIII, Section III.

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