

# THE GREAT IDEAS ONLINE

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## INTELLECT: MIND OVER MATTER

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PART FOUR: IS INTELLECT IMMATERIAL?

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As preparation for teaching psychology I studied neuroanatomy and neurophysiology in the early 1920s at Columbia University's College of Physicians and Surgeons. I became so fascinated with neurological science that, ever since then, I have followed its outstanding research contributions and the progress that has been made in our understanding of the nervous system.

The developments since World War II have been revolutionary. I taught my students that the brain was an elaborate electrical network with a vast number of cells and connections. We have now come to understand the brain as a chemical factory in which the messages transmitted are electrochemical. It is much less like an ordinary computer than it was once thought to be.

The brain's many chemical products are facilitators of the impulses that move across its nerve fibers. We know now that biochemical disturbances in the brain account for some mental disorders. From the extraordinary advances in research in the last twenty years, we have every reason to expect breakthroughs in our understanding of how the brain works that we cannot foresee at present.

At the same time, we must confess that there is much we do not understand, especially about the brain's relation to the mind. We do not understand, for example, why the transmission of nervous impulses from the external sense organs does not result in conscious experience until these impulses activate the cerebral cortex. A blockage that would prevent their passage from the lower and midbrain connecting centers to the cerebral cortex would prevent awarenesses of colors, sounds, or smells that stimulated the external senseorgans.

Even more puzzling is the fact that when nervous impulses coming from the eyes reach the occipital area of the cerebral cortex, we see

shapes and colors; when coming from the ears, they reach the temporal area and we hear sounds. These impulses, so far as we know, are the same in character; the nervous structure of the two cortical areas mentioned are also the same. Why, then, should there be a qualitatively different result in our conscious experience?

Neither do we understand the neurological basis of the agnosia that leaves a person able to see the shape and color of a rose held before his eyes, yet not be able to recognize that it is a rose until the rose is held under his nose to smell.

Both the visual and the olfactory organs seem to be working perfectly. The understanding of what a rose is has not been lost. What is malfunctioning in the brain that prevents understanding from being elicited by the sight of the rose when it is so readily elicited by the smell of it? We do not know.

There is much that we have yet to learn regarding the brain's relation to the mind in the field of sensory experience. But how much greater is our ignorance of the brain's relation to the mind in the sphere of intellectual activity? This does not mean that we will never have the knowledge we now lack. Further progress in neurology may achieve it, *but only if whatever happens in the mind can be fully explained by what happens in the brain.*

That *if* raises the questions to which we must now address ourselves. One is a question about the inseparability of mind and brain and the extent to which they may be distinct from one another. Another is a question about the dependence of the mind upon the brain and the extent to which mind may be independent of the brain.

The issue with which we are concerned is often poorly stated in the literature of the subject because the word "identity" is misused. Strictly speaking, if two things can be distinguished in any way, even if it is only by the fact of their twoness, they are not identical. Two ball bearings that are alike in every respect except the space each occupies at a given time cannot properly be called identical, though the word is often misused that way, as it is also misused when we speak of identical twins.

One extremist theory about mind and brain asserts their identity. Used literally, the word "identity" must here mean that there is no distinction whatsoever between mind and brain. That, in turn, means that the two words—"mind" and "brain"—are strict synonyms. If that is the case, we cannot meaningfully ask about the re-

lation of psychology to neurology because psychology is identical with neurology.

Eliminating that troublesome word “identity” from our discussion, I propose to proceed in a way that I think clarifies the issue. It is a double-barreled issue involving two pairs of contrary views in such opposition to one another that both cannot be true but both can be false.

The first pair of opposed views I regard as going to opposite extremes, and, in my judgment, both are false. The opposed views in the second pair are more moderate; each has some truth in it, yet both cannot be completely true. If one is completely true, the other must be false, and it is possible that both may be false.

Let me deal with the two extremist views first, the falsity of which can be easily shown. In our philosophical vocabulary we have two “ism” words to name them. The words are “dualism” and “monism” and they at once suggest to us what is being said about mind and brain by the dualist, on the one hand, and by the monist, on the other hand.

In the history of thought about mind and brain, or body and soul, Plato and Descartes are the outstanding psycho physical dualists. They assert that man is constituted by two utterly distinct and existentially separate substances--for Plato, body and soul; for Descartes, matter and mind, extended substance and thinking substance. Strictly speaking, a human being is not what common sense supposes that person to be: one indivisible thing. That person is actually divided into two individual things, as different and distinct as the rower and the rowboat in which he sits.\*

If this dualistic theory were true, it would confront us with the most embarrassing, insoluble difficulties should we try to explain how these two utterly different substances could interact with one another, as they appear to do in human behavior. Fortunately, the riddles of the mind-body problem that have plagued modern philosophy since Descartes can be dismissed. Two incontrovertible facts, which are matters of general knowledge, suffice for the refutation of psychophysical dualism.

One is the fact that we fall asleep from time to time. For some portion of the time that we are asleep, our minds are totally inactive. We are unconscious. We know that sleep is induced by fatigue toxins that affect the brain. It can also be induced by drugs and pills. But if the mind is totally independent of the brain, then why should

one brain condition allow for consciousness and another bring about unconscious sleep?

The second fact, equally well known to us, is that brain injuries or defects produce mental disabilities or disorders. We also have the reports from neurological surgery that tell of electrical stimulation of the brain producing conscious experiences. How can this be so if mind and brain are as separate as the rower and the rowboat, a separation so complete that it permits the rowboat to be sunk while the rower swims away unharmed?

The theory of the monist is at the diametrically opposite extreme. In earlier times it was called materialistic monism because it asserted that matter and matter alone exists—that the world consists of nothing but bodies and their motions. In the present century it has come to be called the identity hypothesis, misusing, as we have seen, the word “identity.”

Materialistic monism that reductively identifies mind with brain cannot retain distinct meanings for the two words “mind” and “brain.” The reduction of mind to brain totally excludes mind and the mental from consideration. There is nothing to talk or think about except the brain, its activities, its states, and its processes. The reductive materialist should expunge from his vocabulary the word “mind” and all the other words that go with it.

Can these words be expunged from his or anyone else’s vocabulary and still allow us to describe experiences that everyone has? If not, then mind and brain are at least analytically distinct, even if they are existentially one and the same thing.

Toast and butter are existentially separate when each lies on a separate plate. When hot toast is buttered, the two become inseparable, but when the buttered toast is eaten, it still remains possible to distinguish by taste the butter from the toast.

Mind and brain may be existentially inseparable, and so regarded as one and the same thing, yet the mental and the physical may still be analytically distinct aspects of it. This can be put to the test in the following manner. Let a surgeon open up an individual’s brain for inspection while the patient remains conscious. Let the surgeon dictate to a secretary his detailed observation of the visible area of the brain under scrutiny, and let that area of the brain be its center for vision. Let the patient dictate to another secretary a detailed description of the visible walls of the room in which the surgery is occurring.

The language used by the surgeon and the language used by the patient will be irreducibly different: the one will contain words referring to physical phenomena occurring in the brain; the other, words referring to conscious experiences of the room. The extreme monism that asserts not only the existential unity of brain and mind, but also that there is no analytical distinction between them, thus becomes untenable.

With both extremes eliminated, I turn now to the other more moderate pair of contrary views about the relation of mind to brain. Here there is no question about the analytical distinction between mental and physical acts, states, and processes. Both of the opposed views agree on that score but differ with regard to the dependence of the mental on the physical.

One view maintains that the activation of the brain and of other nervous processes is both the necessary and the sufficient condition for the occurrence of all mental states and of all the mind's acts and processes. This theory can be called materialistic, but it is not a reductive materialism.

The other view agrees in part and disagrees in part. With regard to certain sensory experiences, it agrees that the action of the brain and nervous system is both a necessary and a sufficient condition for their occurrence. But it disagrees when it comes to the intellectual activity of the mind in conceptual thought, and in any other activity that involves conceptual understanding, as in human senseperception when the individual is not suffering from agnosia.

At this point, sharp disagreement arises. Here the non-materialistic view maintains that brain action is only a necessary, but not a sufficient, condition for the occurrence of the mental acts under consideration. If this is so, then some other factor—an immaterial factor—must be added. If we call the first of these two theories a moderate materialism, because it is not reductive and affirms at least the analytical distinction of the physical and the mental, then perhaps we may call the second, contrary theory a moderate immaterialism.

In the current state of this dispute, those who espouse the view I have called a moderate materialism tend to concentrate on sensory acts and processes in their effort to show that the brain is all that is needed for such mental acts and processes to occur. They give little attention to intellectual processes and conceptual thought, and ignore or overlook the involvement of concepts in senseperception, memory, and imagination; or they attempt to explain

these intellectual processes in terms that require no distinction between the senses and the intellect as separate cognitive powers.

In defending the opposed theory, which I have called a moderate immaterialism, the argument appeals mainly to what is required for intellectual activity and conceptual thought. Its central contention is that intellectual acts and processes cannot be explained in sensory terms and that more than the brain or any other material organ is required for them to occur

To say that the brain is only a necessary, but not a sufficient condition, is to say that we *cannot* think conceptually *without* our brains, but that we *do not* think conceptually *with* our brains. The brain is not the organ of thought as the eye and the brain together are the organs of vision, or the ear and brain together are the organs of hearing.

There is another way of saying this. As the eye or ear, together with the brain, are sense-organs, the brain itself is not a mind-organ; or, more precisely, the brain is not an intellect-organ. The most that can be said of the brain in relation to the human mind is that it is an intellect-support organ upon which the intellect depends, without which it cannot think, but with which it does not think.

Which of the two moderate but contrary views of the relation of mind to brain is correct determines how we answer the question that was left hanging at the end of the preceding chapter. If moderate materialism is correct, then the difference in kind that follows from the uniqueness of the human mind by virtue of its intellectual powers may be only a superficial difference in kind because all the extraordinarily wide differences between human and animal life, human and animal behavior, can be explained by differences in degree between human and animal brains.

Only if the brain is not the sufficient condition for intellectual activity and conceptual thought (only if the intellect that is part of the human mind and is not found in other animals is the immaterial factor that must be added to the brain in order to provide conditions both necessary and sufficient) are we justified in concluding that the manifest difference in kind between human and animal minds, and between human and animal behavior, is radical, not superficial. It cannot be explained away by any difference in the physical constitution of human beings and other animals that is a difference in degree.

I will try, as briefly as possible, to summarize the argument that I think supports the view that the intellect is the immaterial faculty needed, in addition to the brain, for the occurrence in the human mind of conceptual thought. The argument, *as stated*, is not to be found in the philosophical writings of Aristotle and Thomas Aquinas, but its main tenets can be found there.

The argument hinges on two propositions. The first asserts that the concepts whereby we understand what different kinds or classes of things are like consist of meanings that are universal. The second proposition asserts that nothing that exists physically is ever actually universal. Anything that is embodied in matter exists as an individual, a singular thing that may also be a particular instance of this class or that.

From these two propositions, the conclusion follows that our concepts, having universality, cannot be embodied in matter. If they were acts of a bodily organ such as the brain, they would exist in matter, and so could not have the requisite universality to function as concepts that enable us to think of universal objects, such as kinds or classes, quite different from the individual things that are objects of sense perception, imagination, and memory. The power of conceptual thought, by which we form and use concepts, must, therefore, be an immaterial power, one the acts of which are not acts of a bodily organ.

The reasoning that supports the first of the two foregoing propositions is as follows. Our common or general names derive the meanings they carry from the concepts we have. The meaning of a common or general name is universal. It always signifies a class of objects, never any particular instance or member of the class. Particular instances are designated by proper names or definite descriptions. When we use the word “dog,” we are referring to any dog, regardless of breed, size, shape, or color. To refer to a particular instance, we would use a canine name, such as “Fido,” or a definite description, such as “that white poodle over there lying in front of the fire.” Our concepts of dog and poodle not only enable us to think about two classes of animals, they also enable us to understand what it is like to be a dog or a poodle.

The second proposition about the individuality of all material or corporeal things is supported by the facts of common experience. The objects we perceive through our senses are all individual things—that is, this individual dog, that individual spoon. As I pointed out in the preceding chapter, we have never seen a triangle in general, nor can we imagine one. Any triangle that we can draw

on a piece of paper, any triangle we have seen or imagined, is a particular triangle of a certain shape and size. But we can understand what is involved in triangularity as such, without reference to the character of the angles or the area enclosed.

Whatever exists physically exists as an individual, and whatever has individuality exists materially. No one has ever experienced or produced anything that has physical or corporeal existence and also is universal in character rather than individual.

The argument then reaches its conclusion as follows. Our concepts are universal in their signification of objects that are kinds or classes of things rather than individuals that are particular instances of these classes or kinds. Since they have universality, they cannot exist physically or be embodied in matter. But concepts do exist in our minds. They are there as acts of our intellectual power. Hence that power must be an immaterial power, not one embodied in a material organ such as the brain.

The action of the brain, therefore, cannot be the sufficient condition of conceptual thought, though it may still be a necessary condition thereof, insofar as the exercise of our power of conceptual thought depends on the exercise of our powers of perception, memory, and imagination, which are corporeal powers embodied in our sense-organs and brain.

If it can be shown that any other animal, such as the dolphin, has the power of conceptual thought, the argument just stated would lead to the same conclusion about the dolphin: namely, that it has an immaterial power and that the action of the dolphin brain is only a necessary, but not a sufficient, condition of the occurrence of conceptual thought on the part of the dolphin.

I have just summarized the bare bones of the argument, but readers may wish to put its premises to the test.

First, attempt to explain the general significance of the common nouns in our vocabulary, the significance of which is so different from the designative reference of the proper names we use, without appealing to our conceptual understanding of classes or kinds to which perceived or imagined particulars belong. If you cannot do that, then our apprehension of universals—of classes or kinds—is indispensable to our understanding of the meaning of common nouns or names.



Our cognitive sensory powers do not and cannot apprehend universals. Their cognitive reach does not go beyond particulars. Hence, we would not be able to apprehend universals if we did not have another and quite distinct cognitive power—the power of intellect.

Then ask yourself whether the particular individual things you apprehend by sense-perception or imagination are always bodies or the attributes of bodies, never anything the existence of which is incorporeal or immaterial. When you open your eyes and look out the window, what do you see? This or that individual tree; this or that automobile; this or that particular building. Whatever it is, it is always some physical thing, some material embodiment. When you close your eyes and let your imagination roam, what do you then apprehend? The same again: always some individual, physical thing; some material embodiment.

The fact that the world we perceive through our senses and all the things we can imagine and remember are individual physical things or material embodiments gives great credibility to the materialistic thesis that the world of real existences is entirely material, that nothing immaterial really exists.

The great credibility of that thesis does not make the proposition self-evidently true, nor does it constitute proof of its truth. The proposition, however credible, still remains a postulate that should not be dogmatically asserted as an indubitable truth—true beyond the shadow of a doubt.

What has just been said not only challenges the dogmatism of the materialist; it also, paradoxically, reveals the reasons why the materialistic dogma is so credible to all of us as well as the grounds for asserting the immateriality of the intellect.

Why do we find the materialistic dogma so credible? Because the world of our sense-experience and of our imagination and memory is filled with nothing but individual objects all of which are physical bodies, material things or their attributes.

At the same time, the individual physical things in the world of our sense-experience are also particular instances of certain kinds or classes of things—the kinds or classes to which the common names or general terms we use refer. We could not use those words with their general significance if we were not able to apprehend the objects of conceptual thought—the intelligible, universal objects that only our intellects can apprehend.


Readers are thus led to the conclusion that the power by which we apprehend those intelligible objects, those universal objects of conceptual thought, must be immaterial. For if the concepts by which we apprehend such objects were acts of bodily organs, their material embodiment would prevent them from being apprehensions of anything universal. They would, in this respect, be no different from the percepts and the images that are acts of bodily organs (the sense-organs and the brain) and, therefore, are always apprehensions of individual things or of their particular attributes.

We are not done yet. It was pointed out earlier that the two extreme theories of psychophysical dualism and materialistic monism can both be false, though both cannot be true. We must now acknowledge that the same applies to the two moderate theories: the theory that the brain is not only a necessary but also a sufficient condition of all mental acts and processes; and the theory that the brain is only a necessary, but not a sufficient, condition of conceptual thought, that an immaterial intellect is also required and must be posited in order to provide an adequate explanation of conceptual thought. These moderate theories cannot both be true, but both can be false.

Even if both are false, we are left with one solid conclusion, which is the one point on which both of these moderate theories concur: namely, that there is at least an analytical distinction between mental and physical acts and processes. That being the case, our understanding of the intellectual powers of the human mind can be stated in purely mental terms. It does not depend on our knowledge of the brain, nor does it depend on how we view the intellect's relation to the brain.

Thus, for example, the clear difference between perceptual and conceptual thought, which is so important in understanding the difference between animal and human behavior, remains unchanged by the adoption of one rather than the other of the two conflicting theories. It remains the same whether we view conceptual thought as an act of the brain or of an immaterial intellectual power. What is affected by taking one or another of these alternative moderate views is only whether the difference in kind between human and animal behavior is a superficial or a radical difference in kind.

Lest readers are misled by the foregoing summation, let me clearly reiterate the position that I think I have shown to be demonstrably true: that the brain is only a necessary, but not a sufficient, condition for conceptual thought; that an immaterial intellect is also req-

uisite as a condition; and that the difference between human and animal behavior is a radical difference in kind. 

***We welcome your comments, questions, or suggestions.***

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