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The concepts of mind, soul, and consciousness are key to an understanding of ourselves and how we interact with the universe around us. Ian Barbour names the mind/body problem as one of the major subjects of long-term discussion among religion, philosophy, and science, including cognitive psychology. However, his treatment of the traditional philosophical positions on this topic is wanting. What is most intriguing is that, after years of discussion, newer approaches to the mind/body problem seem to have come full circle, sharing many commonalities with the much older approach of property dualism.

And here are trees and I know their gnarled surface, water, and I feel its taste. These scents of grass and stars at night, certain evenings when the heart relaxes—how shall I negate this world whose power and strength I feel? Yet all the knowledge on earth will give me nothing to assure me that this world is mine. You describe it to me and you teach me to classify it. You enumerate its laws and in my thirst for knowledge I admit that they are true. You take apart its mechanism and my hope increases... What need had I of so many efforts? The soft lines of these hills and the hand of evening on this troubled heart teach me much more.

—Albert Camus,
The Myth of Sisyphus, 1942

Introduction

How can the view that the world is made of mindless physical particles be reconciled with the intuitive perception that human beings have rational, free, and independent minds? Does neuroscience threaten the notion of “soul”? Can the “mind” be identified through closer examination of the brain—to “enumerate its laws” and “take apart its mechanism”? These are but a few of the questions fundamental to a true understanding of our psychology and ourselves, questions that underlie the discussions among science, religion and philosophy on what has become known as the “mind/body problem.”

The Aristotelian world did not require nor consider a distinction of mind from body. However, mental events began to be viewed differently following the scientific revolution of the sixteenth and seventeenth centuries. While his elder contemporary, Galileo, was dislodging humankind from its central position in the physical universe, Descartes offered a model for maintaining the dignity and special status of human beings. According to Descartes, the pineal gland, a pea-sized sphere near the middle of the brain, serves as junction box between one’s physical body and non-physical mind. In the following centuries, the idea of a rational mind that resided outside of the mechanistic world would help to ensure that the determinism inherent in Newton’s physics did not extend to human-related concepts of free will and morality.

Despite its broad acceptance, the ghost-in-the-machine position of dualism does not come cheap. The notion of a causal rela-
tionship between the two radically different entities is fraught with epistemological problems. Mental events are held to be non-spatial, yet at the same time they are believed to have influence on the spatially extended physical body. How, then, do mental phenomena, such as feelings, thoughts, sensations and intentions, result in the movement of one’s hand or perspiration on one’s brow?

Descartes attempted to solve this problem by hypothesizing the existence of a “transducer” in the pineal gland. We now know that the pineal gland serves no such function. Moreover, such a solution merely begs the question, by offering a metaphysical substance that can interact with both physical and mental entities. To date, no such substance has been identified. Although several thinkers had suggested that the mind is reducible to the activities of atoms, the separation of mind and matter was a principle that received wide acceptance by philosophers, theologians, and the general public of Descartes’ age and long after.

Referred to as the “mind/body problem” by Western scholars, a broad range of positions has been developed regarding the mind and its relationship to the physical body. Each position has its strengths and its own set of inherent difficulties; I do not intend to summarize the arguments for and against each position. Rather, I offer here a critique of Ian Barbour’s analysis of the more important treatments of the mind/body problem, as presented in his book, Religion and Science. I shall expand the discussion in key areas by providing a more detailed account of the range of proposed solutions to the mind/body problem, and I shall challenge what I believe to be a number of over-generalizations and mischaracterizations within Barbour’s presentation.

**Alternative Views of the Mind**

Barbour identifies dualism, materialism, two-aspect theories, and multilevel theories as the four main alternatives regarding the mind/body relationship.³ Regarding his analysis, I lay out brief arguments in support of the following claims:

- that Barbour’s characterization of dualism is overly simplistic;
- that his category of materialism omits important details and includes others that should be elsewhere;
- that a separate category of philosophical behaviorism might be appropriate;
- that his two-aspect theories category is a mixing of property dualism and philosophical behaviorism; and
- that the range of positions might better be characterized as a circle, rather than a linear continuum.

**Dualism**

While Barbour presents dualism as a single concept, most philosophers draw a distinction between substance dualism and property dualism. It is the former that is most commonly associated with Descartes and to which Barbour appears to be referring, when writing about dualism.

In an effort to rid himself of unsustainable ideas, Descartes systematically challenged each of his own thoughts and beliefs.⁴ He concluded that his belief in his own existence as a thinking entity remained as the only

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While his elder contemporary, Galileo, was dislodging humankind from its central position in the physical universe, Descartes offered a model for maintaining the dignity and special status of human beings.
belief beyond doubt ("Cogito ergo sum"). Because one can doubt the existence of one's own body but not that one is a thinking mind, Descartes reasoned that there must be a radical difference between these two types of substances. The substance dualism position is distinguished by its view of minds as wholly separate, nonphysical entities, distinct from and independent of the physical body. A popular version of this position holds that the mind resides within the body's physical machinery: specifically, the mind is inside the head and intimately interacts with the brain.

Property dualism does not postulate separate physical and nonphysical substances, but rather a brain with properties unlike those of any other physical structure. These properties cannot be adequately described by reducing the mind to physical mechanisms. For the most part, the properties of conscious intelligence are forever beyond the purview of the sciences.

While Barbour presents the concept of epiphenomenalism as a form of materialism, I agree with Churchland® that it is more appropriately classified as one of the forms of property dualism. Simply put, epiphenomenalism suggests that mental events ride "above" the phenomena of the brain. The mind is like a layer of oil on the surface of the ocean that believes itself to be pulling the waves up and crashing them on the shore.

On the other hand, interactionist property dualism, or interactionism, envisions a two-way influence: mental events do have a causal influence on the brain and behavior, as well as vice versa. Psychological phenomena are an integrated but irreducible aspect of neurological functioning. As discussed below more fully, this dualistic perspective has a good deal in common with several of the positions presented as alternatives to dualism.

Materialism

The materialist position, that mental states are exclusively states of the brain, is perhaps the most common position held by philosophers and cognitive scientists today. There are a number of varieties of materialism or physicalism, however, each with distinctly different implications for the status of the mind and the field of cognitive psychology. Three of the more prominent materialist positions are type identity theory, eliminative materialism, and token identity theory.

Type identity theory was developed partly in response to new findings in neuroscience during the 1950s and '60s. This position proposes a one-to-one relationship between each mental event and a specific pattern of neurological firing. Mental states are, therefore, identical to the associated brain activity.

Eliminative materialists, on the contrary, argue that talk of mental states should be abandoned and replaced with references exclusively to brain states. Moreover, they propose that cognitive science should ultimately be abandoned in favor of neuroscience. Research in neuroscience does not support the one-to-one correlation that type identity theorists claim.

Finally, token identity theorists uphold the notion of mental events but reject the type identity theorists' assertion of a direct, one-to-one correlation between specific mental events and neurological events. This posi-
tion is most consistent with the field of cognitive psychology and has led to the philosophical position of functionalism. Functionalists hold that mental events can be examined independently of neuroscience and are classified in terms of their causal role.

Barbour begins his section on materialism by pointing to behaviorism as an example of materialism, an incorrect classification, I believe. Before explaining why behaviorism should not be categorized in this way, the distinction between psychological behaviorism and philosophical behaviorism should be pointed out. The first is an empirical research program that rejects appeals to mental events as explanations of behavior. By contrast, as philosopher William Bechtel explains, philosophical behaviorism is primarily concerned with the semantics of our common mentalistic vocabulary. The goal is to translate terms that purport to refer to mental activity into terms that speak only of behaviors or propensities to behave in certain ways.

Both psychological and philosophical behaviorism have their roots in logical positivism. Where the two differ, however, is the influence of Wittgenstein and Ryle on philosophical behaviorism. Ryle characterizes the mind/body problem as a “category mistake.” He gives the example of someone asking to see a university. After being shown through the buildings, walked around the grounds, introduced to the faculty and students, the person asks, “Now can you show me the university?” A category mistake is made by referring to the “university”—or in this case the mind—as an independent entity apart from its constituent elements. Bechtel explains Wittgenstein’s view that philosophical problems, such as the mind/body problem, arise when language goes on holiday...[that is,] when we misuse ordinary language. And that the solution comes not in answering the problems philosophers pose but by dissolving the philosophical problems by appealing to how we ordinarily use the language.

Philosophical behaviorism, therefore, is not an alternative to dualism or materialism, but seeks, rather, to eliminate the conundrum by showing it to be a linguistic problem. While most philosophical behaviorists are likely to be materialists, neither form of behaviorism is logically inconsistent with dualism. One could imagine that mental phenomena, although not an appropriate subject of study for social scientists, could ultimately be based in immaterial mind-stuff.

Two-Aspect Theory

Barbour identifies the two-aspect theory as the third of what he sees as the four main alternatives to the mind/body problem. This theory holds that some events have both a physical and a mental aspect. In reality, the two-aspect theory is but another version of property dualism. According to Bechtel, it is essentially epiphenomenalism. Barbour includes analyses of ordinary language in the category of two-aspect theory. However, ordinary language philosophy is part of the analytic tradition and is associated with Wittgenstein and philosophical behaviorism, among others.

Both the two-aspect theory and ordinary language philosophy are important elements in this discussion. However, they are distinct positions addressing different issues. The first asserts that minds have simultaneously both a physical and a mental aspect, similar to the wave-particle duality of quantum physics. Minds are real entities with real attributes that are the appropriate subject matter for the neurological and cognitive sciences. The second is linguistic theory, which focuses on how ordinary language is used, including the way in which mental events are classified. The first hypothesizes an entity with two distinct but real aspects. The other suggests one entity (with one “aspect”), which is referenced from different linguistic perspectives. Neither is a stand-alone theory. Two-aspect theory belongs to property dualism and ordinary language phi-
losophy is most closely related to philosophical behaviorism.

**Multilevel Theories**

Barbour seems to present a continuum of treatments, with dualism at one end and multilevel theories at the other. Interestingly, this continuum more closely resembles a circle in many respects, as multilevel theories come remarkably close to property dualism. Both positions hold that mental phenomena are causal and, as Barbour says of the multilevel view, “mental states and physical events are totally dissimilar kinds of things.”

When discussing multilevel theories and Roger Sperry, one of its chief proponents, Barbour writes:

> [In] all organisms there is a hierarchy of levels, with distinctive irreducible laws at higher levels. Emergent, holistic properties arise from organizational relationships and configurational patterns...\(^9\)

Describing interactionist property dualism, Churchland writes:

> [M]ental properties are here said to be emergent properties, properties that do not appear at all until ordinary physical matter has managed to organize itself, through the evolutionary process, into a system of sufficient complexity.\(^11\)

Even Descartes, the paradigmatic dualist, might have passed as a multilevel theorist when he repeatedly denied that the relation between mind and body is like that of a pilot to a ship. Consider the following passage from “The Principles of Philosophy”:

> [T]here are...certain things which we experience in ourselves and which should be attributed neither to the mind nor body alone, but to the close and intimate union that exists between the body and mind...\(^12\)

**Conclusion**

What, then, can be said about the mind and its relationship to the physical body? Can it be deconstructed—analyzed and classified? Or should one simply appreciate the mystery and complexity of the mind, as Camus suggested in the case of one’s natural surroundings? In the end, both will be done, in all likelihood. As understanding of the brain and its processes increases, so too will the need to reconcile the often divergent views of cognitive science, philosophy and theology. Attempts to bridge these realms must begin with a thorough and accurate representation of a long tradition of theorizing in the philosophy of mind.

Far from being resolved, the mind/body problem remains one of the great mysteries of the day. That an independent mind is so central to the sense of self and yet remains so difficult to support scientifically suggests that there is need for ongoing debate, hypothesis testing, and cultural grappling with these issues. Because the notion of mind goes to the very core of what it means to be human, the implications of those discussions are profound.
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For the past several years, he has worked with community health centers in low-income neighborhoods, healthcare programs for the homeless, and primary healthcare for those infected with HIV/AIDS. He plans to assist in the development of health programs that bridge the Cartesian mind/body chasm, as a practical application of his philosophical stance.

He lives with his family in the Cincinnati area.