

Dualism vs. Materialism: A Response to Paul Churchland

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Paul M. Churchland, in his book, Matter and Consciousness, provides a survey of the issues and positions associated with the mind-body problem. This problem has many facets, and Churchland addresses several of them, including the metaphysical, epistemological, semantic, and methodological aspects of the debate. Churchland, of course, has very strong views on the subject, and does not hide his biases on the matter.

In this paper I shall reexamine the metaphysical aspect of the mind-body problem. The metaphysical question concerns the existential status of the mind and the body, and the nature of the relationship between them. Like Churchland, I shall not hide my biases on the matter. What follows may be thought of as a rewriting of the second chapter of Churchland's book ("The Ontological Issue") from a non-naturalistic perspective.

Substance Dualism

René Descartes argued that the defining characteristic of minds was cogitation in a broad

sense, while that of bodies was spatial extension. Descartes also claimed that minds were not spatially extended, nor did bodies as such think. Thus minds and bodies were separate substances. This view has come to be called substance dualism. Descartes's argument for substance dualism can be summarized as follows:

- (1) Minds exist.
- (2) Bodies exist.
- (3) The defining feature of minds is cogitation.
- (4) The defining feature of bodies is extension.
- (5) That which cogitates is not extended.
- (6) That which is extended does not cogitate.

Therefore,

- (7) Minds are not bodies, and bodies are not minds.

That is to say, there are at least two distinct kinds of existents: minds and bodies. The mental and the material are completely different substances.

Materialism

Descartes's contemporaries and successors have raised a number of objections to this view. Among his contemporaries, the problem of how these two completely distinct substances could interact causally, as they apparently do, loomed the largest. Although the notion that distinct substances cannot interact is simply an a priori assumption, many philosophers have found it intuitively compelling.

In response to this problem, philosophers have argued that one or the other of Descartes's

substances must not exist, and that a single substance must instantiate both minds and bodies, assuming that both minds and bodies exist in the first place; considerations of parsimony lend further support to this approach. This entails the rejection of one or more premises of the above position. Idealists such as George Berkeley have denied (2), thereby denying the existence of bodies or matter, while materialists have denied (5), (6), and/or (1), thereby asserting either that minds are material or that minds do not exist at all.

I shall not address idealism in this essay. For various reasons that are outside the scope of this discussion, materialism has the greatest following among contemporary philosophers. But philosophers have not been able to agree on a formulation of the materialist position. In this essay, I shall examine five forms of materialism: identity theory, philosophical behaviorism, eliminativism, property dualism, and functionalism.

Paul Churchland suggests four advantages that materialism has over dualism, but these advantages are dubious.

Firstly, as noted, materialism is more parsimonious; but until materialists prove that materialism can explain everything that substance dualism can explain, there is no reason to give parsimony any weight.

Secondly, Churchland claims that materialism can in fact explain things that dualism cannot, and cites various advances in neuroscience in understanding the function of the brain, and the corresponding lack of understanding of the proposed mental substance. Churchland also notes the obvious dualist response: progress in understanding material substance is irrelevant to the question of whether material substance is all there is. Churchland counters that what the dualist takes to be "the central capacities of the nonphysical mind, capacities such as reason, emotion, and

consciousness itself" have in fact been elucidated by "materialist research programs":

So far as the capacity for reasoning is concerned, machines already exist that execute in minutes sophisticated deductive and mathematical calculations that would take a human a lifetime to execute. And so far as the other two mental capacities are concerned, studies . . . have revealed many interesting and puzzling facts about the neurochemical and neurodynamical basis of both emotion and consciousness. The central capacities, no less than the peripheral, have been addressed with profit by various materialist research programs. (20)

But this response reveals a deep confusion about the nature of consciousness, on the part of both the dualist and the materialist. Churchland's remarks show a failure to distinguish between consciousness and mere information processing. But evidence from the neurosciences may show that the dualist has also failed to draw some important distinctions. The dualist lumps emotions, reasoning, consciousness, and volition under the same general category--according to Descartes, they are all simply forms of cogitation. This failure to recognize important generic differences between these phenomena makes the dualist position vulnerable to certain materialist objections (I shall explore these differences in greater detail later).

This vulnerability manifests itself in Churchland's third argument against substance dualism, which he calls "the argument from the neural dependence of all known mental phenomena" (20). Churchland is here referring to the effects of drugs and brain damage on reasoning, the emotions, and consciousness. But the dualist can accept the premise of this argument while denying the conclusion. As noted, the claim that two distinct substances cannot affect each other causally is one that the dualist need not accept. The dualist can accept the claim that physical events affect mental phenomena, and reply that mental events (especially volitions) have physical effects. But dualists would be in an intuitively stronger position if they would make the aforementioned distinctions, for volitions are not clearly dependent on neural processes, nor is it clear in what sense consciousness,

properly understood, is dependent in this way.

Churchland's last argument is the argument from evolutionary history.

For purposes of our discussion, the important point about the standard evolutionary story is that the human species is a wholly physical outcome of a purely physical process . . . we are notable only in that our nervous system is more complex and powerful than those of our fellow creatures. . . . (21)

Churchland is simply wrong about the import of evolutionary history. Evolutionary theory as it is currently formulated is a diachronic study of material processes. But like the synchronic studies of material processes discussed in Churchland's second argument, above, no amount of explanatory success along these lines has any relevance to the question of whether such material processes are all there is.

The strongest arguments for substance dualism over materialism stems from introspective evidence. Introspection reveals qualia and self-awareness. Materialists have thus far been unable to provide a satisfactory account of "inner" experience, insofar as neither that which introspects nor that which is introspected admits of materialist explanation. Regardless of how much credence introspective evidence merits for scientific purposes, the very fact that introspection occurs at all is a blow to the materialist position. Materialists have thus far failed to provide an account of how qualia or self-awareness could have a material basis. These failures will be examined in greater detail below.

Varieties of Materialism

Materialism can be grouped into two broad categories. Those of the first group, which I shall label non-emergentist materialism, assert that the mind either is reducible to recognizably non-mental structures and processes (such as those studied by biologists or physicists), or that the mind

does not exist at all. Those of the second group, which I shall label emergentist materialism, assert that the mind is an irreducible existent in some sense, albeit not in the sense of being an ontological simple, and that the study of mental phenomena is independent of other sciences. The first group includes identity theory, philosophical behaviorism and eliminativism; the second group includes property dualism and functionalism.

Identity Theory

Identity theory asserts that mental states "just are" physical states, specifically states of the brain and central nervous system, in exactly the same way that water "just is" H₂O. Identity theorists predict that a sufficiently well-developed neuroscience will someday be able to provide one-to-one correspondences between common-sense mentalistic descriptions of moods, thoughts, etc. and states of the central nervous system. Identity theorists make the further claim that such correspondences will not merely indicate the lawful covariance of two separate processes, but will rather be evidence of the type-identity of these processes.

Identity theory allows the use of ordinary mentalistic discourse, while at the same time placing mental phenomena on a material basis, without introducing any additional ontological apparatus. But despite its affirmation of the meaningfulness of talk about inner states, identity theory fails to deal with the introspection issue.

Identity theorists have been accused of committing a "category error" in that the properties that apply to mental phenomena do not apply to material phenomena and vice versa. Thoughts do not have a spatial location, and brain states do not have qualia, and it seems logically possible that mental states could exist in the absence of brain states and vice versa. Churchland suggests that the identity theorists might respond that this is merely a semantic problem, one that can be overcome

if we train ourselves to apply brain-state predicates to mental states, in the way that we have learned to talk about temperature in terms of mean kinetic energy.

The following thought-experiment may suggest why such a response is unsatisfactory. Suppose that the occurrence of a certain abdominal pain is invariably and exactly correlated with the occurrence of a certain brain state. The dualist, of course, asserts the correlation is just that--a correlation and nothing more, and just as the correlation between the position of a needle on a fuel gauge and the level of gasoline in the tank does not imply the identity of these phenomena, neither is identity implied in the case of the pain. The identity theorist, however, asserts such an identity. But now suppose that both the pain and the brain state are also correlated with a certain state of the stomach, e.g., the flaring of an ulcer. Now our original identity theorist is joined by three more identity theorists: identity theorist #2 asserts the identity of the mental state and the stomach state, identity theorist #3 asserts the identity of the stomach state and the brain state, and identity theorist #4 asserts the identity of all three states. I leave it to the reader to draw the implications.

One further objection to the identity theory runs along these lines: it seems that it is possible for a deaf person to know everything science could tell us about acoustics, the physiology of the ear, music theory, etc., yet still not know what it is like to hear Beethoven's ninth symphony. After all the physical phenomena are completely understood, still, something remains.

To this objection Churchland responds,

The identity theorist can admit a duality, or even a plurality, of different types of knowledge without thereby committing himself to a duality in types of things known. The difference between a person who knows all about the visual cortex but has never enjoyed the sensation-of-red, and a person who knows no neuroscience but knows well the sensation-of-red, may reside not in what is respectively known by each (brain states by the former, nonphysical qualia by the latter) but rather in the different type, or medium, or level of representation each has of the same thing: brain states. (34)

But in bringing in representation, Churchland cuts his own throat. For if sensation-of-red is a representation of a brain state, then the question becomes, why does such a representation have the experiential quality that it does, or indeed any experiential quality at all? Qualia may constitute representational knowledge of brain states, but representations themselves can be objects of knowledge and description, especially when statements about what they represent do not exhaust all that can be known about them, as is the case with qualia. In addition to the monadic properties of qualia, if qualia are representations of brain states then a further question arises, viz., to what or whom are these brain states represented, which brings self-awareness back into the picture. The questions raised by representation are ones for which the dualist has a ready answer, but not the materialist.

Philosophical Behaviorism

Philosophical behaviorism makes a weaker reduction claim than identity theory does. Philosophical behaviorists cash out their reduction claims in terms of synonymy, rather than identity. According to philosophical behaviorism, talk about minds is synonymous with talk about behavioral dispositions. The model for such a reduction is based the verificationist/operationalist approach to dispositional terms, whereby dispositions are defined in terms of counterfactuals, e.g., "fragile" is defined as "would break if dropped on a hard surface from a height of two feet, etc.". Following such a model, the philosophical behaviorist tries to define mentalistic predicates like "is angry" or "believes in ghosts" or "wants a new car" in terms of counterfactuals about the the subject's observable behavior.

This position does not address the introspective issue at all. Setting aside the usual problems that have largely discredited verificationist semantic theories, philosophical

behaviorism's definition of mental states in terms of publicly observable behaviors simply ignores the issues of whether and how there can be phenomena that are not publicly observable--which is what self-awareness and qualia purport to be.

In any case, specifying the relevant counterfactuals is hard enough for simple physical properties like fragility; it becomes a practical impossibility for many mental terms, as Churchland acknowledges (24).

Eliminativism

Eliminativism takes a more radical stance than identity theory or philosophical behaviorism. Eliminativism denies that mental predicates can be reduced to physical predicates, on the grounds that talk of minds and mental properties is incoherent and ultimately does not refer to anything, as is the case with talk of phlogiston and witches. Belief, desire, fear, sensation, pain, joy, etc., are elements of a conceptual framework ("folk psychology") that does such a poor job of representing the phenomena to which it is applied ("conscious intelligence") that it should be discarded.

Eliminativism is Churchland's preferred theory. he offers three arguments in its favor.

Firstly, there is the argument from explanatory poverty. Churchland cites sleep, learning, memory, and mental illness as phenomena that folk psychology either misunderstands or does not explain at all, even unsuccessfully. According to Churchland, the explanatory and descriptive resources of folk psychology are particularly inadequate when applied to people with damaged brains (46).

Secondly, there is the argument from induction. Our folk theories about fire, astronomy, and motion were highly erroneous and had to be discarded. Conscious intelligence is much more complicated than these other phenomena. So it seems extremely unlikely that folk psychology

should be any more accurate than the other folk theories mentioned.

Thirdly, there is the argument from a priori probability of eliminativism compared to other sorts of materialism. Comparing eliminativism to identity theory and functionalism, Churchland notes that the identity theorist expects to find "vindicating matchups" of the concepts of folk psychology "in a mature neuroscience" (46) (such matchups would be token identities for functionalism, rather than the type identities of the identity theory). But Churchland notes that there are many ways in which a neuroscience can be explanatorily successful without providing such intertheoretic matchups. So it would seem that eliminativism has a higher probability of being correct.

Regarding the first and second arguments, if Churchland's characterization of folk psychology is correct, then mentalistic predicates are terms in a theory whose function is to explain conscious intelligence. To adequately address this claim would require a long digression into issues that pertain to epistemology and the philosophy of science. I would like to keep focused on the ontological issue as much as possible, so I will merely suggest an alternative characterization and acknowledge that it needs further argument.

The first and second arguments are based on a misconstrual of the nature of the problem. Specifically, Churchland confuses the explanans and the explanandum. Mentalistic predicates are not theoretical terms. Rather, these terms refer to phenomena that are themselves the objects of possible explanation. Churchland's claim is that mentalistic discourse is a theory about conscious intelligence in the way that discourse about Zeus's thunderbolts is a theory about lightning, and that just as discourse about Zeus cannot be reduced to discourse about static electricity, and should simply be discarded as a literal account of what lightning is, so should mentalistic discourse be

discarded for analogous reasons. My claim is that mentalistic discourse is like a claim about lightning itself, i.e., it refers to something that can be designated by some sort of ostension.

Presumably Churchland would disagree with Nietzsche's aphorism, "There are no facts, there are only interpretations." Regardless of the lack of a clear dividing line between theory and observation, and regardless of the inseparability of perception and interpretation, one does not beg the question by insisting that there must be something that our theories and interpretations are about. To eliminate the concept of mind is not to do away with a bad explanation; rather, it is to deny that there is anything there to be explained at all.

All the above attempts to reduce or eliminate mental concepts fail because they all try to sweep something under the rug. None of them seriously comes to grips with self-awareness or qualia. At best, non-emergentist materialism provides a consistent picture of a world in which self-awareness and qualia do not exist. Most philosophers and even more non-philosophers find it obvious that these things do exist. This has led materialist philosophers to try to construe the mind as an emergent property. The idea behind emergentist materialism is that organized complexes of matter can have properties that cannot be predicated of the material constituents of such complexes--mental properties being a case in point.

Property Dualism

Property Dualism asserts that when matter is organized in the appropriate way (i.e., organized in the way that living human bodies are organized), mental properties emerge. Different versions of property dualism describe this in different ways. Epiphenomenalism and interactionism are two such versions.

Epiphenomenalism asserts that while material causes give rise to sensations, volitions, ideas,

etc., such mental phenomena themselves cause nothing further--they are causal dead ends. Thus, our conviction that we have conscious experience is well-founded, but our sense of the connection between our conscious experience and our actions is an illusion.

As materialists, epiphenomenalists are committed to the view that the origin of conscious organisms must be consistent with evolutionary theory, but to achieve this, the epiphenomenalist is forced to use the loopholes in the laws of natural selection. Since, according to epiphenomenalism, consciousness has no effect on activity, and therefore cannot affect survival, epiphenomenalism must claim that consciousness is somehow an unavoidable side effect of an adaptive mutation, or is itself a mutation which has persisted due to a lack of maladaptive consequences.

Epiphenomenalism allows a thoroughly materialist ontology to coexist with self-awareness and qualia, but has little to say about the nature of this coexistence. Epiphenomenalism points to the central nervous system of higher vertebrates and asserts that such a material complex has consciousness, but cannot offer any finer-grained analysis--it cannot tell why this particular material organization is conscious, but rocks, trees, and robots are not.

What little it does say about how self-awareness and qualia depend on matter conflicts with our intuitions about the role the mind plays in our lives. To the extent that epiphenomenalism neither satisfies such intuitions nor explicates the material processes it postulates, epiphenomenalism fails to provide a compelling alternative to substance dualism or non-emergentist materialism.

While epiphenomenalism conflicts with certain intuitions about the mind, interactionism conflicts with intuitions about matter. Interactionism allows mental causes to produce material effects, and vice versa. But having allowed this, interactionism offers no reason why such causes

cannot in principle be reduced to material processes that are or someday will be better understood. Interactionism seems to be practically indistinguishable from a pessimistic version of the identity theory, one that claims that mental processes are identical to material processes, but in ways that we cannot understand. Alternatively, the interactionist has the option of asserting that consciousness is a fundamental property of matter, but in that case the practical difference between interactionism and substance dualism becomes unclear--the relationship between mind and matter is equally inexplicable in each case.

Functionalism

Functionalism claims that mental states are functional states. As such, they are individuated in terms of their relationship to environmental inputs, behavioral outputs, and other mental states (unlike behaviorism, which individuates mental states in terms of environmental inputs and behavioral outputs alone). These mental states may be realized by any number of material or even immaterial things--mental states may be thought of as being analogous to chess pieces, whose defining characteristics are specified in terms of the role they play in the game, not in terms of the wood, plastic, or whatever that particular pieces might be made of. Functionalism, which bears a certain resemblance to the medieval theory of hylomorphism, is therefore compatible with substance dualism as well as materialism.

Functionalism has a number of advantages over the materialist theories thus far discussed. It explains how non-human aliens or sufficiently advanced robots might have mental states, in spite of their lack of brains like ours. It explains how mental states emerge from matter in a relatively non-mysterious way. Mental states for the functionalist can be defined in "folk-psychological" terms or in the terms of a more sophisticated psychological theory, so if it turns out that the

eliminativists are right about the referential status of ordinary mentalistic discourse, functionalism can accommodate the eliminativists' insight without denying the existence of mental states as an object of theoretical explanation.

But functionalism has a number of shortcomings. Like non-emergentist materialism, functionalism fails to deal with the introspective issue. It seems logically possible that an entity with the same functional organization as humans might not have self-awareness or qualia, and vice versa. And although functionalism identifies mental state tokens with brain-state tokens, unlike the type-identity claims of identity theory, like the claims of identity theory this claim depends on a substantial quantity of empirical findings which have yet to surface.

Substance Dualism Reexamined

Given the failures of materialist theories to explain how matter could have the properties associated with introspection, substance dualism would seem to have a clear dialectical advantage. But substance dualism as formulated by Descartes fails to make certain important distinctions, and because of this vagueness, Cartesian dualism seems to classify as mental certain processes that are more properly classified as functional or even material. Since materialists can explain these putatively mental processes in material terms, it might be supposed that other mental properties might be explained materialistically also. If the mental is delineated more precisely, these errors can be avoided.

For Descartes, the self is a mind, and a mind is essentially a "thinking thing" (res cogitans). But Descartes uses the term "thinking" very loosely, including reasoning, imagination, emotion, sensation, consciousness, self-awareness and volition under that rubric. Reasoning, emotion, and

sensation each have functional and experiential-qualitative aspects, and emotion and sensation are also associated with physiological effects. While the experiential-qualitative aspects of these phenomena resist materialistic explanation, the other aspects do not, which may lead materialists to believe that they are making progress against substance dualism.

Accordingly, I will now suggest a version of substance dualism, which I will label volitional dualism, that does not have this shortcoming. Volitional dualism differs from Cartesian dualism in that the self, the mind, the will, and consciousness are distinguished. A rough characterization of each follows.

The self is the locus of experience, i.e., that which "has" or "undergoes" experiences, or, simply, that which experiences. It is that which unites experiences that are separated in time and space, the "unity of apperception" of Kant's philosophy. It is an irreducible complex consisting of a mind, a will, and consciousness. It is not primarily a "thinking thing", it is a "willing thing".

The mind is a set of perceptual, affective, and information processing functions (a finer grained analysis would separate these functions, but this analysis is adequate for present purposes). As such, it is an abstraction that may be concretized by some combination of the materialist approaches that have been examined so far.

The will is the capacity of the self to originate goals which in turn determine the acts of the self. The self chooses options for action from among those that are (re)presented to the self through the medium of consciousness, in accordance with the goals that the self has willed. While I am assuming that the choice of actions is limited to the options presented to the self, I am purposely leaving open the question of whether there are any limits to the range of goals that the will can originate.

Consciousness is the interaction between the self and all that is not the self via experiential-qualitative states. Self-awareness is the inference of self from the unity of conscious experience. Consciousness distills the activity of the mind into qualia, which may represent material or functional states but which are not themselves essentially material or functional. By integrating qualia into a unified experience the self comes to understand what its options for action are, and the relationship between those options and its goals. This understanding allows the self to act in accordance with the goals it has originated.

It would seem that only the mind admits of functional or material explanation. Qualia and self-awareness are constitutive of consciousness, and materialist accounts of these introspective processes have already been shown to be failures. As for the will, I have tacitly assumed that the will is free, and if this assumption is correct, then it would seem difficult to explain the origin of the will in evolutionary terms, since an organism with free will can set goals that jeopardize its ability to survive and reproduce. But if the will is constrained to originate goals that directly or indirectly promote survival and reproduction, then an evolutionary account of volition becomes less improbable.

The application of the above concepts to instrumental rationality may help clarify how the self and its constituents relate to each other, and to the body. Once a goal has been originated, the decision-theoretic procedures involved in evaluating whether a given course of action will promote a given goal may be accounted for using some sort of information processing model, which may in turn be realized materially, in states of the central nervous system. But the origination of (ultimate) goals in the first place cannot be accounted for in terms of information processing. In other words, the will originates goals, and the mind performs the calculations that pertain to the attainment of

those goals. But the will can only choose from the options that are presented to it. Consciousness abstracts the huge mass of information involved in mental functions and converts it into qualitative experience, much as Locke's secondary qualities are an abstraction of great masses of data about primary qualities. It is through qualitative experience that the self understands what its options are. The self wills its priorities and chooses options in terms of qualitative experiences; through the medium of consciousness these selections are translated into mental activity and ultimately behavior.

So, for example, a self might select the pursuit of a career as a pitcher in professional baseball as one of its goals. This will entail the performance of numerous activities in various situations, such as attempting to strike out an opposing player in a game. But the pitcher has no direct qualitative experience of the enormous amount of information that is processed by his central nervous system pursuant to the execution of a even a single pitch (experimenters in robotics have found that just programming a bipedal machine to walk is a daunting task). His consciousness abstracts this information into a form that represents the import that this information has with respect to his actual or potential goals.

This of course is only a bare outline of volitional dualism, and therefore suffers from vaguenesses of its own. But I think it suffices to show that, if suitably developed, volitional dualism could be an alternative to both materialism and Cartesian dualism.

Conclusion

Owing partly to a priori considerations and partly to a certain vagueness in Descartes's formulation of substance dualism, many philosophers have been drawn to some form of materialism

when confronted with the traditional mind-body problem. Materialism successfully accounts for certain functions that Cartesianism associates with the mind but fails to account for the most interesting features of our inner life. Volitional dualism is a reformulation of substance dualism that takes both the explanatory successes and failures of materialism into account. Such a reformulation emphasizes the importance of consciousness, rather than information processing, as an object of philosophical understanding.

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