Materialism and Behaviorism

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Introduction

In stark contrast to Cartesian substance dualism is materialism. Materialism denies the existence of a “mind” as an entity separate from the body. According to materialism, the concept of “mind” is a relic of the past from before a time of scientific understanding and when used today is only properly shorthand for “brain” or “behavior.” Materialism therefore implies that: 1. There are no pure minds or souls in Heaven, Hell, or any such kind of afterlife after bodily death; 2. There are no spirits or immaterial essences, and therefore spiritual and self-transformative practices that purport to move people beyond their bodies, brains, and behaviors are absurd; and 3. Reincarnation and switching bodies (made famous in movies such as Switching Places, Freaky Friday, and Big) are nonsense. A mind just is a body or a body’s behaviors; without a body a mind cannot exist.

Consider the movie Big. In it, a kid named Josh makes a wish to be “big” during an eerie encounter with a fortune-telling
machine at a state fair. When he wakes, he is a 35-year-old adult and is unrecognizable to his mom. He convinces his best friend that he really is Josh and his best friend helps him to get a job and an apartment. Nevertheless, he cannot manage to grow emotionally enough to inhabit his new world. He frustrates his close female friend who cannot understand why he does not want to be romantic with her. According to the standard interpretation of stories like *Big*, a person’s mind contains memories, love, fears, and so on. This is what constitutes the core of who a person really is. The mind is immaterial and cannot be seen; it can only be experienced by the person whose mind it is. But a person’s mind is also connected to a body, which enables the person to communicate and interact with others in the world. Some bodies have minds (like other people) and some do not (like rocks). A body is incidental to a person’s selfhood; it is just a house for the mind. So it is possible that a body can age and have the same mind. And this is what happens to Josh. Eventually, Josh finds the strange fortune-telling machine and wishes to be a boy again, and he re-enters his kid-body, now with the knowledge and wisdom he gained in his transformative journey.

*Big* is a fantasy, but it trades on common beliefs about what a person is (an immaterial mind) and what a body is (a material house for a mind which is incidental to a person’s true identity). Note that if dualism is false and the body and mind are not two, but one, as materialism claims, then a person could not have the same mind in a vastly different body (or even in a slightly altered body). This is because every change in the memories, emotions, and experiences of a person would not take place in an immaterial mind, but rather would be translatable to talk of the body, the interactions of the body with the world, or as many materialists claim, talk of the brain.

Take what it would mean in *Big* for Josh to change according to such a materialist understanding. Imagine that it is possible to induce rapid aging in a person through an entirely physical process (say, the taking of a pill that speeds up a person’s metabolism and turnover of bodily cells), such that overnight Josh ages by ten years. Even then, the turnover of those cells would have changed his mind just as much as it changed his body. But if his mind is identical and reducible to his brain, then his mind would (of logical necessity) be changed just as much as his body. This is evident through Leibniz’s Law (also called the “indiscernibility of identicals”), which is a metaphysical truth that simply states that if something is identical to something else it must be identical in every way (or else it would not be the same object, but merely a similar object). That means Josh’s mind would no longer be that of a boy; rather, he would have the mind of a man. Romantic desires would no longer be foreign to him (as they are in the movie) because the biological chemicals, such as testosterone, that are responsible for aging him into a man with a beard are the same chemicals that are responsible for creating sex drives. His biochemistry would be changed and so would his energy levels and emotions. Furthermore, his brain mass would be larger, since a person’s brain grows in the process of aging from childhood to adulthood. That additional brain mass would entail not only different biochemicals, but also more and differently connected neurons. Those are the same neurons and connections, materialists claim, that are responsible for the development of concepts, language, understanding, and so on. So if Josh woke up with his body transformed into a man, then his mind would be changed just as much. He could not possibly wake up with the same mind he had as a boy, according to a materialist.

The story of *Big* is not just impossible; it is nonsense. The fact that people easily make sense of the story and readily suspend their disbelief shows just how deeply ingrained dualist assumptions of the body and mind are. Our ignorance and ability to be misled by fantasies, however, does not show that materialism is false. Instead, the materialist will state, it shows we are gullible and that intuition is not a reliable guide to the truth. If we were more sophisticated in our ability to grasp reality, *Big* would seem unbelievable and incomprehensible.

There are many different versions of materialism and behaviorism. This chapter will introduce some of the most common
motivations for embracing it and some of the most important historical developments of it.

**Empiricism and Science as Replacement for God**

The scientific revolution began in the mid-sixteenth century and the progress of science throughout the nineteenth century made science a proven method of quick advancement for knowledge. Some philosophers, such as David Hume (1711-1796), argued that people should "reject every system … however subtle or ingenious, which is not founded on fact and observation" (Hume [1751] 1998). He and those who agree are called empiricists. Rene Descartes (1596-1650) (who argued for substance dualism) and John Locke (1632-1704) had philosophical theories that tried to forward philosophical views within science, then called mechanical philosophy, which sought to find explanations that were subject to physical laws. Whereas Descartes was a rationalist, relying on principle, Locke was an empiricist and relied on experience (constituting evidence). Both Descartes and Locke had to prove that their theories were consistent with God and the religion of the time (which in Europe was Christianity); however, later theorists either left God completely out of the picture or tried to show from a theoretical basis that there still was a place for God in science.

Some of the important foundations of science, such as the closure principle and the primacy of the empirical over the theoretical, were prominent in philosophy, as well. In the sciences, experiments and theories rely centrally on the closure principle, which states that material objects have causes and effects that are locatable in the physical world. Without this principle, there would be no reason to do scientific research. Instead of claiming that the cause of a disease is a virus, we could just as easily claim that it is caused by God's wrath or a demonic force. This slowly caused people to rethink their ideas of the existence of God. If God was no longer needed to explain the things that we experience in the world—if science could do it completely without the use of God—then why do we need to believe in the existence of God?

An empiricist will readily point out that you cannot see God, nor can see your mind. You may be able to see someone else's brain if you witness a surgeon operating on someone, but you cannot see anyone's mind, including your own. And according to the principle of closure, something that is immaterial cannot affect something that is material, so the brain or other physical things are more properly the cause of our actions, not some mystical immaterial substance of the mind.

The principle of Ockham's Razor—named after William of Ockham (1285-1347), a philosopher from the middle ages-states that when something of a different kind (in this case, immaterial things) is not needed to explain something else (material things), then it can be eliminated. Favoring the sciences, Ockham's Razor is an explanatory principle of parsimony, and it gave philosophers a justification to remove God and other items that could not be seen (like minds) from their ontological status as real (separate) objects. Instead, talk of minds and mental events, such as thoughts and feelings, are simply shorthand expressions for processes in the body and world that science helps people to understand. It is therefore reasonable, they thought, that either minds really are just bodies or else minds do not exist. Ockham's Razor became the battle-cry of the new materialist brand of philosophers, scientists, and psychologists in the modern era and even today.

**Materialism**

Some philosophers who worked in the same time period as Descartes and Locke, such as Thomas Hobbes (1588-1679), began to follow a theory generally called materialism or physicalism, which states that all there is in the world is the...
world and in us is material, and there is nothing immaterial. The mind had historically been conceived as immaterial with immaterial properties, such as thinking, believing, and desiring. Hobbes, however, insisted that the mind—and even God—must be material. When I think of a cat and you think of a cat, we think of the same concept (we assume), but how can we know that, and communicate with confidence, when there is nothing physical in the thought? How is it the case that we can ever verify that we are thinking of the same thing? Under materialism, if there is no such thing as an immaterial mind then what was previously called “thinking” must instead be explained by the body, the interactions of the body in the world, or more simply in modern materialism, the neurological firings of the brain. What we think of as thinking is an action of the body, and what we think of when we think of concepts such as “cat” is anchored in the material world of sense perception.

Type identity is a materialist theory that asserts that all mental states are identical to certain types of physical states. Contemporary proponents J. J. C. Smart (1920-2012) and U. T. Place (1924-2000) explained that science will reveal to us through experiments which kinds of mental states are equivalent to which kinds of physical processes in the brain. Note that a correlation between two kinds of states does not show that they are identical: a mental one of love and a physical one of more available serotonin in the brain, for example. Also, a physical event under type identity cannot be said to cause a mental one. Being hugged by someone does not cause a feeling happiness; rather it is an example of a physical action that causes certain nerves in the skin to send signals to the brain and create a sequence of firing that is identical to a feeling of happiness. Both correlation and causation assume that there are two events of different kinds that are related. Under materialism, there is just one kind of thing, so while it may appear that a mental and a physical event are related, the mental event is identical to the physical event. It is important to refrain from these errors when speaking about materialism.

Brain scans reveal the physical processes that happen in the brain when people commonly experience seemingly mental events, giving credence to the type identity theorist’s assertion that mental and brain events are just the same thing. A well-known example is that of the experience of pain, a kind of mental event that appears to be an immaterial feeling. The type identity theorist states that pain just is the completely physical event of C-fibers firing in the brain. When C-fibers fire, a person is in pain. Sometimes a person may not be fully aware of the pain they have, say, for example, if their attention is elsewhere or if another neurological process is covering up a subjective experience of pain. Imagine a person who gets struck in the head by a large rock. He is in fact injured and C-fibers fire in the brain, but then the person becomes unconscious. That is not to say he is not in pain; he is just unaware of it. Or say that a person gets attacked by a shark in the ocean and succeeds in fending it off. She is bleeding and is injured, but the ocean is so cold that her extremities are numb. In this case, there is a different physical process that is either postponing or covering up C-fibers firing, and therefore her experience of pain will be delayed until she is out of the cold ocean.

There have been numerous attacks against type identity theory that are so successful that many identity theorists have changed their account. One of the most devastating objections is based on the observation that different kinds of brains can realize pain. Animals surely experience pain like we do, but most animals have dramatically different brains, connections, and biochemicals than we do, so mental events like pain cannot be categorically reduced to a particular human brain kind of event. Hilary Putnam (1926-2016) astutely argued that this observation, called the multiple realizability of the mental, should lead us to abandon any supposed identity of kinds between the mental and the physical (Putnam 1967). Any account of mental events must explain how similar mental events appear to take place across a wide range of physical beings. We might even imagine beings from a distant planet who are silicone-based instead of carbon-based that also experience pain even though their systems have no physical similarities whatsoever to
human brains and neurological events. This argument has led many to embrace a different account of the identity or reduction of the mental to the physical. In order to avoid this criticism, for example, token identity theories purport that all mental events reduce to a physical brain state, yet claim the identity is not necessarily instantiated by the same or similar brain states between people, or even within a single person at various times. Expositions of this theory vary and can often cross into other theories of mind, such as functionalism (see Chapter 3) and property dualism (see Chapter 4), so they will not be discussed here.

Despite most theorists' discouragement of the arguments against type identity theory, there is a more radical materialist theory that embraces even more counterintuitive conclusions. Instead of taking on the explanatory burden of connecting the identity of mental and brain events, these theorists claim that everything is purely physical. There are no thoughts, no emotions, no minds. Everything is just an effect of brain and other physical processes. This kind of materialism is called eliminative materialism or reductive materialism because it states not only that the mind and the world should be explained consistently and within science as Descartes and Locke agreed, or that the mind should be seen as part of the physical realm as the type identity theorists do, but that there simply is no mind. Contemporary proponents of eliminative materialism Paul Churchland and Patricia Churchland explain our perceptions of the world according to neurology. An eliminative materialist would say that the feeling of pain is an illusion. We have become habituated to call certain things pain when at bottom there are only physical events happening. In discussions with the Dalai Lama, Patricia Churchland claims that she cannot say she even has the emotion of love toward her own child (because love is an illusion) and the beliefs of ordinary people who say there are such things as love and other emotions are false (Houshmand, Livingston, and Wallace 1999). Folk psychology, the theory of mind that embraces intuitions by the “common folk” who are uneducated about science, is merely a convenient myth.

Eliminative materialism is the most extreme view opposing substance dualism. The eliminative materialist truly eliminates the existence of minds, and with them, all of the features of mentality. They reject experiences, thoughts, and even actions. Therefore, although eliminative materialism explains everything within a scientific framework, it does so at the great cost of our intuitions, thoughts, feelings, and selves. Indeed, it eliminates most of what a theory of mind intends to understand. Many philosophers claim that Ockham’s Razor has gone too far if most of what we intended to explain gets dismissed entirely. An account of the mind that brings back more of the features of normal life and explains those within a scientific framework is preferable to preserve the life and meaning of what people think, do, and say.

Behaviorism and The Logical Positivists

In the empiricist tradition, a different movement attempted to situate the mind within the realm of the material world, not through the identity of the two but through the explanation of the mind completely in terms of physical behaviors and events. Logical behaviorism claims that mental events (like pain) are to be understood as a set of behaviors (saying “ouch,” screaming, or cringing after being hit). In this way, pain is entirely explainable within a concrete scientific framework that can be observed and communicated clearly between all beings.

The logical positivists (spanning from the Vienna Circle in 1922 through the 1950s in the United States) thought that if they could mimic the methods of the sciences that philosophical advances would also be imminent. Those such as Otto Neurath (1882-1945) and Rudolph Carnap (1891-1970) performed rigorous analyses to show that the mind and other non-observable and non-scientifically verifiable objects did not exist, and that those things we thought were immaterial could be constructed from completely material objects and processes. Some argued that all talk of immaterial objects or
processes should be eliminated from our language. Their impact was tremendous and the terrain of Western philosophy shifted toward philosophy of language throughout the twentieth century. The period of logical positivism is also known as “the linguistic turn” (of the century). Some of the most important philosophers of the twentieth century, Ludwig Wittgenstein (1889-1951) and W. V. O. Quine (1908-2000), were closely aligned with the Vienna Circle and logical positivism.

The logical positivists appeared to have a solution for the dilemma concerning the meaning of what people say and the integration of the mental within the physical. Instead of rendering everything involving the mental illusory or false, mental talk can be translated and should be translated into talk of behavior. The mind therefore becomes encapsulated within the realm of action. The argument goes like this: we do not need to eliminate all talk of our minds or our thoughts, and we do not need to say that all things involving such subjects are false. It is just that the meanings of all of those words and thoughts are not what they seem at first. What these words really are is a kind of shorthand for things that are all empirically observable, and most importantly, our behaviors. After all, we cannot see our thoughts and it seems like what we have always really meant by our talk of the mental we have created from observations of behavior. When I say, “Mom is angry,” what I mean is that she is acting in such and such a way, not smiling, furrowing her eyebrows, not talking much, and so on. In this way, many of the things that we say come out true, and they all rely on empirical evidence—the evidence that we have always been gathering from the behavior of people. According to the logical behaviorist, if mental talk cannot be translated into behavior talk, then that particular mental talk is meaningless, just like Lewis Carroll’s nonsense poem “Jabberwocky.” The poem sounds grammatical and it resembles real words: “Twas bryllyg, and the slythy toves,” it begins (Carroll and Tenniel 1872). People often have interpretations and emotional reactions to it, but it does not mean anything. Logical behaviorists believed poetry, art, and much of literature fell into this camp. It was entertaining but meaningless.

The logical behaviorists soon became overrun by possibly the most decisive objections in the history of philosophy. Whereas most philosophical positions refine themselves and carry more or fewer adherents, logical positivism and logical behaviorism had such devastating objections of inconsistency leveled against them that adhering to them became nearly impossible. There are two theoretical objections that were particularly damaging for logical behaviorism. The first depends on the principle of verificationism. Many of the logical positivists, including Carl Hempel (1905-1997), held a theory whereby all truths relied on their verification, either analytically (in virtue of their meanings, or by definition) or synthetically (not in virtue of their meanings, which, for Hempel indicated that they were true by experience) (Hempel 1980). Rudolph Carnap, though a member of the Vienna Circle, realized that verification was too stringent a demand to be met by any proposition, and he spent a good portion of his philosophical career trying out different criteria to rescue the theory from the criticism. As argued by Hilary Putnam, the principle of verification itself could not be verified and it was therefore “self-refuting” (Putnam 1983). Second, behaviorists were unable to provide the necessary and sufficient behavioral conditions required for translating talk about minds into talk about behaviors. In fact, Peter Geach (1916-2013) gave an objection to logical behaviorism that eliminated any kind of definition of beliefs or other mental states purely in terms of behaviors. Everything that a person does, or is disposed to do, depends on the person’s beliefs and desires, so defining one belief in terms of certain actions just prolongs the problem of defining it, since the actions used to define it will make reference to yet other beliefs and desires. The account is therefore circular (Geach 1957, 8).

Another objection argues that behavior is both unnecessary and insufficient to account for what people mean by their use of mental concepts. The success of this objection affects the strong version of logical behaviorism (and usually the view to which people refer) which states that there are necessary and sufficient conditions within behavior to define
mentality. To refute this view, focusing on the sufficiency of the behavior, a critic must find cases where there is behavior that mimics the existence of minds but where there is no mind. Ned Block, for example, said that puppets controlled via radio links by other minds outside the puppet’s hollow body would mimic a mind working but is not a mind working (Block 1981). To refute the other side, that behavior is necessary for mentality, which could be seen as a weaker form of behaviorism if accepted without the sufficiency condition, the critic needs to find examples where there is thinking going on, but without the behavior. This is more difficult. Disembodied minds or thinking objects, if they exist, could constitute counterexamples. Hilary Putnam argued that we can imagine a world in which people experience pain but are conditioned to disguise their pain behaviors (Putnam 1963). Our ability to coherently think of such a world shows that pain is not conceptually and necessarily tied to behaviors, even if in our world we most often experience them contingently connected (see Chapter 5). Ludwig Wittgenstein, regarded as a champion for the logical positivists and the behaviorists, himself eventually turned away from a behaviorist-like theory to a theory that relied on thoughts as separate and independent from our descriptions of them.

**Conclusion**

Today, materialist and behaviorist views enjoy prominence in the sciences, but not in philosophy. Biologists and neuroscientists are working hard to uncover the mysteries of behavior and the brain. Each time they learn more information, they help build a better basis for a purely empirical philosophy of mind. But empirical research alone will never be sufficient to ground a materialist or behaviorist theory of mind. Both the radical theory of eliminativism (which intends to show that the mind does not exist) and non-reductive identity theories (which propose that mental events are always the same as physical events) still require persuasive philosophical arguments to show that minds are redundant or unnecessary in our ontology. Scientists themselves rely on self-reports of feelings and thoughts even while they conduct studies attempting to show that the mind can be reduced to the brain. An evolution in our ways of studying the body and the brain that do not rely on self-reports of feelings and thoughts seems a long way off.

The problem is that evidence of the workings of the body and brain, no matter how advanced, can never in itself establish a definite reduction of the mind to the body and the brain. Science alone cannot demonstrate the equivalence of the mind to the body or brain. Thus far, Ockham’s Razor has not yet successfully shaved off the necessity of talk about minds for most philosophers. One day, an evolution in human ways of relating to ourselves and each other may rely less on feelings and thoughts and more on reactions and behaviors. Perhaps, it may be observed, the human condition was once like that, more instinctual in origin. Even if this is true, observations of the origin of human life do not indicate that our current human condition is entirely material. Some may argue that an evolution towards reliance on an immaterial mind marks progress in our species. Others may argue that the evolution of a seemingly immaterial mind shows the sophistication of brain. The debate will likely continue until talk of immaterial minds appears to be unnecessary.

**References**


Further Reading


