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## *The Mind-Body Problem*

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Let's forget about skepticism, and assume the physical world exists, including your body and your brain; and let's put aside our skepticism about other minds. I'll assume you're conscious if you assume I am. Now what might be the relation between consciousness and the brain?

Everybody knows that what happens in consciousness depends on what happens to the body. If you stub your toe it hurts. If you close your eyes you can't see what's in front of you. If you bite into a Hershey bar you taste chocolate. If someone conks you on the head you pass out.

The evidence shows that for anything to happen in your mind or consciousness, something has to happen in your brain. (You wouldn't feel any pain from stubbing your toe if the nerves in your leg and spine didn't carry impulses from

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the toe to your brain.) We don't know what happens in the brain when you think, "I wonder whether I have time to get a haircut this afternoon." But we're pretty sure something does—something involving chemical and electrical changes in the billions of nerve cells that your brain is made of.

In some cases, we know how the brain affects the mind and how the mind affects the brain. We know, for instance, that the stimulation of certain brain cells near the back of the head produces visual experiences. And we know that when you decide to help yourself to another piece of cake, certain other brain cells send out impulses to the muscles in your arm. We don't know many of the details, but it is clear that there are complex relations between what happens in your mind and the physical processes that go on in your brain. So far, all of this belongs to science, not philosophy.

But there is also a philosophical question about the relation between mind and brain, and it is this: Is your mind something different from your brain, though connected to it, or *is* it your brain? Are your thoughts, feelings, perceptions, sensations, and wishes things that happen *in addition* to all the physical processes in your brain, or are they themselves some of those physical processes?

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What happens, for instance, when you bite into a chocolate bar? The chocolate melts on your tongue and causes chemical changes in your taste buds; the taste buds send some electrical impulses along the nerves leading from your tongue to your brain, and when those impulses reach the brain they produce further physical changes there; finally, *you taste the taste of chocolate*. What is *that*? Could it just *be* a physical event in some of your brain cells, or does it have to be something of a completely different kind?

If a scientist took off the top of your skull and looked into your brain while you were eating the chocolate bar, all he would see is a grey mass of neurons. If he used instruments to measure what was happening inside, he would detect complicated physical processes of many different kinds. But would he find the taste of chocolate?

It seems as if he couldn't find it in your brain, because your experience of tasting chocolate is locked inside your mind in a way that makes it unobservable by anyone else—even if he opens up your skull and looks inside your brain. Your experiences are inside your mind with a *kind of insideness* that is different from the way that your brain is inside your head. Someone else can open up your head and see what's inside, but

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they can't cut open your mind and look into it—at least not in the same way.

It's not just that the taste of chocolate is a flavor and therefore can't be seen. Suppose a scientist were crazy enough to try to observe your experience of tasting chocolate by *licking* your brain while you ate a chocolate bar. First of all, your brain probably wouldn't taste like chocolate to him at all. But even if it did, he wouldn't have succeeded in getting into your mind and observing *your* experience of tasting chocolate. He would just have discovered, oddly enough, that when you taste chocolate, your brain changes so that it tastes like chocolate to other people. He would have his taste of chocolate and you would have yours.

If what happens in your experience is inside your mind in a way in which what happens in your brain is not, it looks as though your experiences and other mental states can't just be physical states of your brain. There has to be more to you than your body with its humming nervous system.

One possible conclusion is that there has to be a soul, attached to your body in some way which allows them to interact. If that's true, then you are made up of two very different things: a complex physical organism, and a soul which is purely mental. (This view is called dualism, for obvious reasons.)

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But many people think that belief in a soul is old-fashioned and unscientific. Everything else in the world is made of physical matter—different combinations of the same chemical elements. Why shouldn't we be? Our bodies grow by a complex physical process from the single cell produced by the joining of sperm and egg at conception. Ordinary matter is added gradually in such a way that the cell turns into a baby, with arms, legs, eyes, ears, and a brain, able to move and feel and see, and eventually to talk and think. Some people believe that this complex physical system is sufficient by itself to give rise to mental life. Why shouldn't it be? Anyway, how can mere philosophical argument show that it isn't? Philosophy can't tell us what stars or diamonds are made of, so how can it tell us what people are or aren't made of?

The view that people consist of nothing but physical matter, and that their mental states are physical states of their brains, is called physicalism (or sometimes materialism). Physicalists don't have a specific theory of what process in the brain can be identified as the experience of tasting chocolate, for instance. But they believe that mental states *are* just states of the brain, and that there's no philosophical reason to think they can't be. The details will have to be discovered by science.

The idea is that we might discover that expe-

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riences are really brain processes just as we have discovered that other familiar things have a real nature that we couldn't have guessed until it was revealed by scientific investigation. For instance, it turns out that diamonds are composed of carbon, the same material as coal: the atoms are just differently arranged. And water, as we all know, is composed of hydrogen and oxygen, even though those two elements are nothing like water when taken by themselves.

So while it might seem surprising that the experience of tasting chocolate could be nothing but a complicated physical event in your brain, it would be no stranger than lots of things that have been discovered about the real nature of ordinary objects and processes. Scientists have discovered what light is, how plants grow, how muscles move—it is only a matter of time before they discover the biological nature of the mind. That's what physicalists think.

A dualist would reply that those other things are different. When we discover the chemical composition of water, for instance, we are dealing with something that is clearly out there in the physical world—something we can all see and touch. When we find out that it's made up of hydrogen and oxygen atoms, we're just breaking down an external physical substance into smaller physical parts. It is an essential feature

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of this kind of analysis that we are *not* giving a chemical breakdown of the way water *looks, feels,* and *tastes* to us. Those things go on in our inner experience, not in the water that we have broken down into atoms. The physical or chemical analysis of water leaves them aside.

But to discover that tasting chocolate was really just a brain process, we would have to analyze something mental—not an externally observed physical substance but an inner taste sensation—in terms of parts that are physical. And there is no way that a large number of physical events in the brain, however complicated, could be the parts out of which a taste sensation was composed. A physical whole can be analyzed into smaller physical parts, but a mental process can't be. Physical parts just can't add up to a mental whole.

There is another possible view which is different from both dualism and physicalism. Dualism is the view that you consist of a body plus a soul, and that your mental life goes on in your soul. Physicalism is the view that your mental life consists of physical processes in your brain. But another possibility is that your mental life goes on in your brain, yet that all those experiences, feelings, thoughts, and desires are not *physical* processes in your brain. This would mean that the grey mass of billions of nerve cells in your skull

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is *not just a physical object*. It has lots of physical properties—great quantities of chemical and electrical activity go on in it—but it has *mental* processes going on in it as well.

The view that the brain is the seat of consciousness, but that its conscious states are not just physical states, is called dual aspect theory. It is called that because it means that when you bite into a chocolate bar, this produces in your brain a state or process with two aspects: a physical aspect involving various chemical and electrical changes, and a mental aspect—the flavor experience of chocolate. When this process occurs, a scientist looking into your brain will be able to observe the physical aspect, but you yourself will undergo, from the inside, the mental aspect: you will have the sensation of tasting chocolate. If this were true, your brain itself would have an inside that could not be reached by an outside observer even if he cut it open. It would feel, or taste, a certain way to you to have that process going on in your brain.

We could express this view by saying that you are not a body plus a soul—that you are just a body, but your body, or at least your brain, is not just a physical system. It is an object with both physical and mental aspects: it can be dissected, but it also has the kind of inside that can't be exposed by dissection. There's some-



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thing it's like from the inside to taste chocolate because there's something it's like from the inside to have your brain in the condition that is produced when you eat a chocolate bar.

Physicalists believe that nothing exists but the physical world that can be studied by science: the world of objective reality. But then they have to find room somehow for feelings, desires, thoughts, and experiences—for you and me—in such a world.

One theory offered in defense of physicalism is that the mental nature of your mental states consists in their relations to things that cause them and things they cause. For instance, when you stub your toe and feel pain, the pain is something going on in your brain. But its painfulness is not just the sum of its physical characteristics, and it is not some mysterious non-physical property either. Rather, what makes it a pain is that it is the kind of state of your brain that is usually caused by injury, and that usually causes you to yell and hop around and avoid the thing that caused the injury. And that could be a purely physical state of your brain.

But that doesn't seem enough to make something a pain. It's true that pains are caused by injury, and they do make you hop and yell. But they also *feel* a certain way, and that seems to be something different from all their relations to

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causes and effects, as well as all the physical properties they may have—if they are in fact events in your brain. I myself believe that this inner aspect of pain and other conscious experiences cannot be adequately analyzed in terms of any system of causal relations to physical stimuli and behavior, however complicated.

There seem to be two very different kinds of things going on in the world: the things that belong to physical reality, which many different people can observe from the outside, and those other things that belong to mental reality, which each of us experiences from the inside in his own case. This isn't true only of human beings: dogs and cats and horses and birds seem to be conscious, and fish and ants and beetles probably are too. Who knows where it stops?

We won't have an adequate general conception of the world until we can explain how, when a lot of physical elements are put together in the right way, they form not just a functioning biological organism but a conscious being. If consciousness itself could be identified with some kind of physical state, the way would be open for a unified physical theory of mind and body, and therefore perhaps for a unified physical theory of the universe. But the reasons against a purely physical theory of consciousness are strong enough to make it seem likely that a physical the-

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ory of the whole of reality is impossible. Physical science has progressed by leaving the mind out of what it tries to explain, but there may be more to the world than can be understood by physical science.