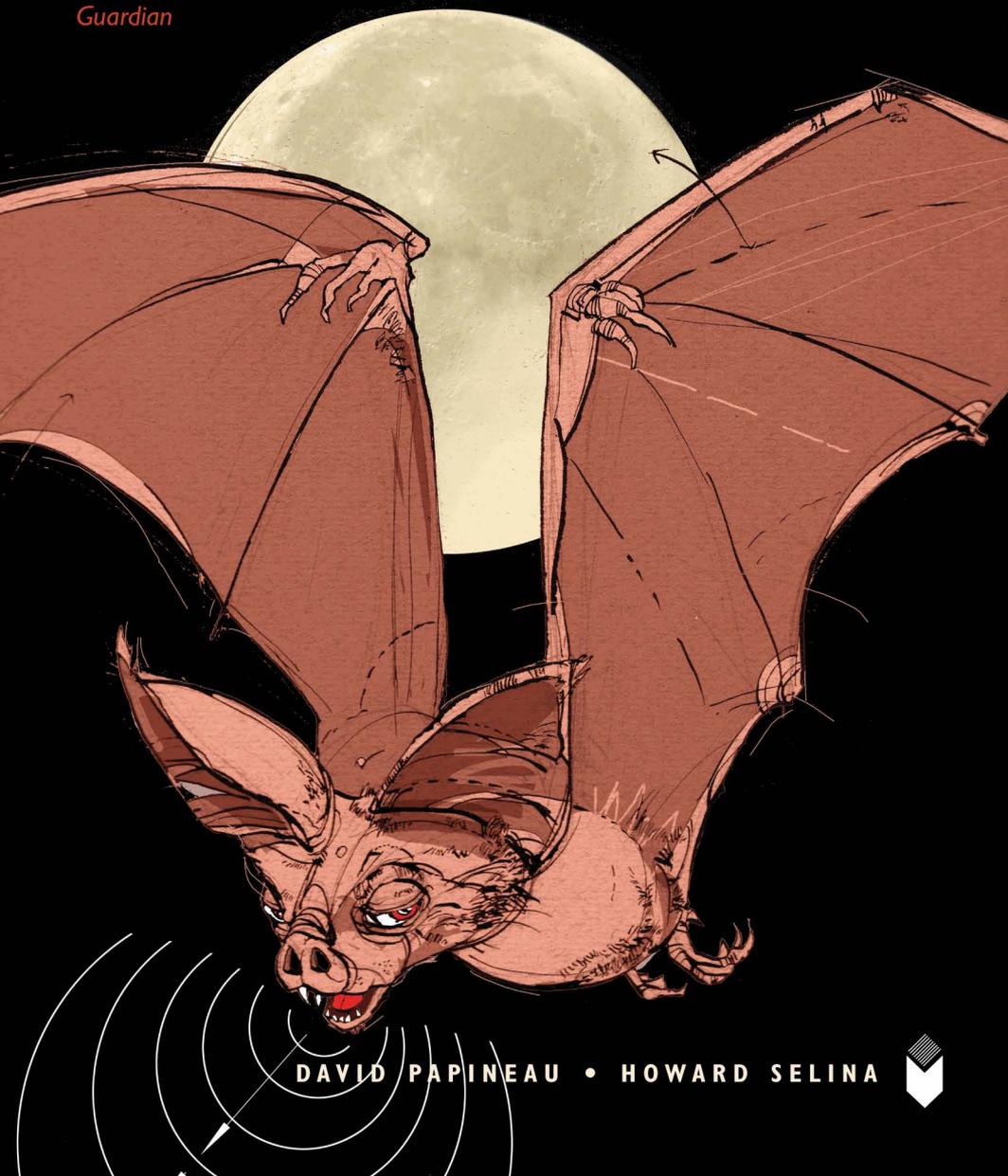


INTRODUCING

Consciousness

'Introducing's gift has been
to raise the précis to the
level of an art form'

Guardian



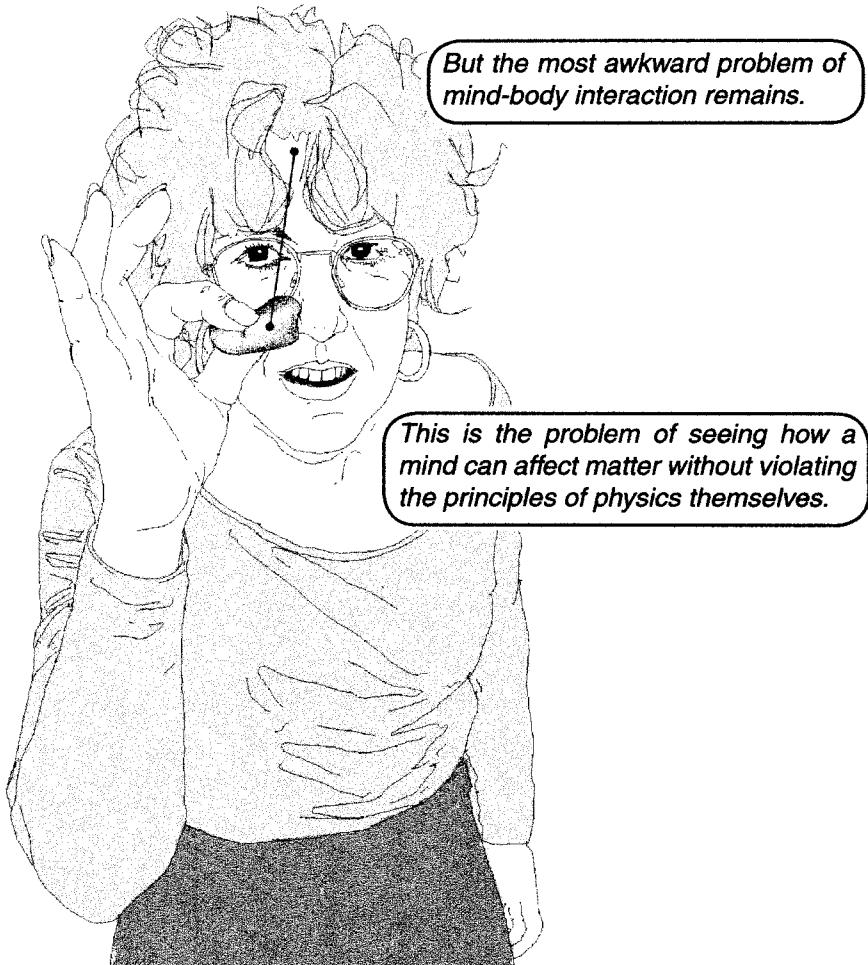
DAVID PAPINEAU • HOWARD SELINA



Arguments Against Dualism

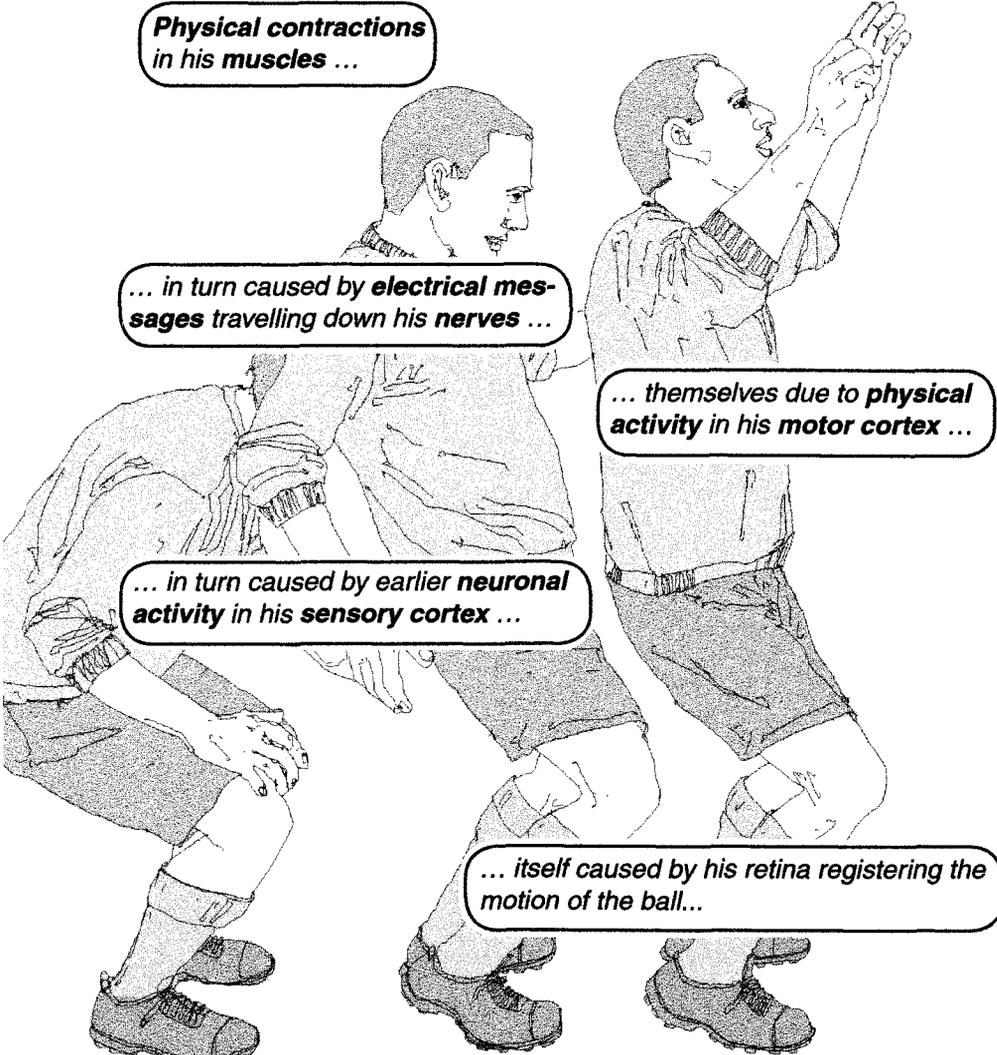
Before we come to detailed theories, though, there are philosophical problems facing any attempt to revive dualism. The most obvious is the problem of mind-body interaction. As we saw earlier, this problem is as old as dualism itself. It provoked Descartes' oft-ridiculed theory that mind and body interact in the pineal gland.

Modern dualism is a dualism of properties, not substances, and so avoids one of Descartes' problems – the problem of explaining how two quite different substances can communicate causally.



Causal Completeness

This is because the physical world appears to be **causally complete**. The causes of physical effects always seem to be other physical causes. If we trace back the causes of a goalkeeper rising to save a ball, say, we will find ...



**Physical contractions
in his muscles ...**

**... in turn caused by electrical mes-
sages travelling down his nerves ...**

**... themselves due to physical
activity in his motor cortex ...**

**... in turn caused by earlier neuronal
activity in his sensory cortex ...**

**... itself caused by his retina registering the
motion of the ball...**

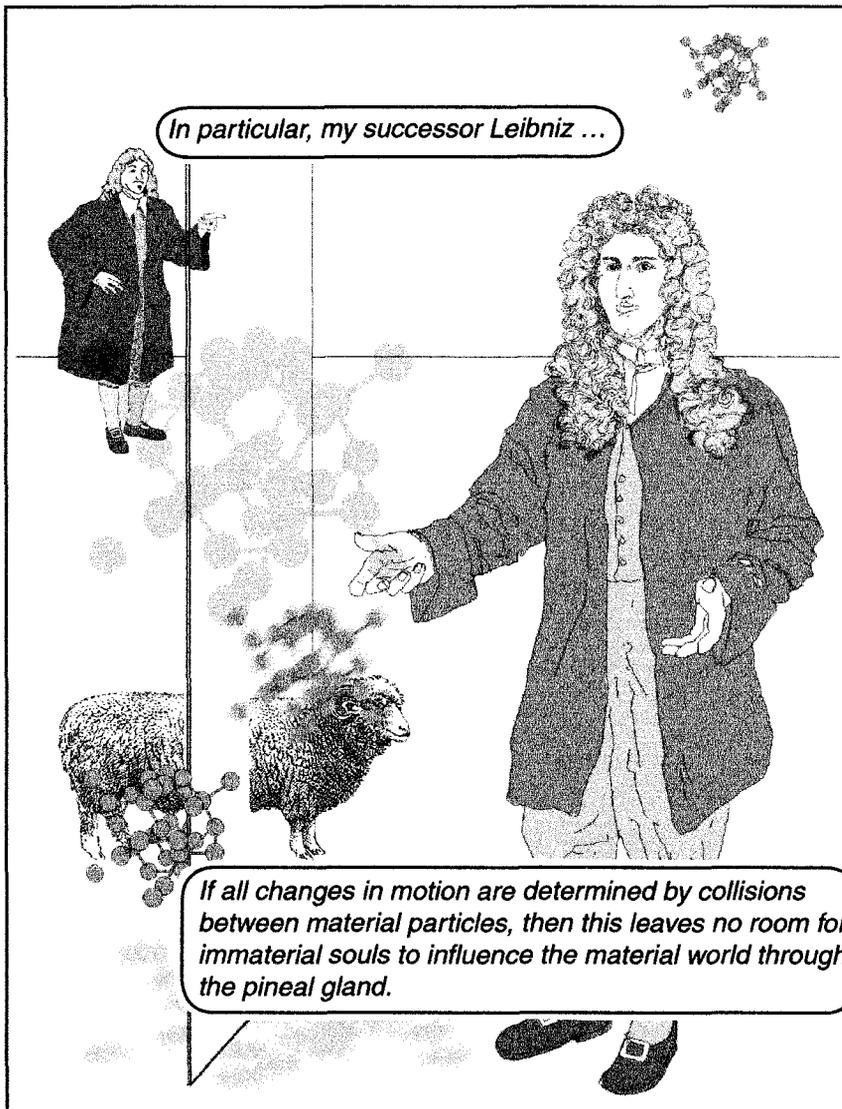
The Demise of Mental Forces

More generally, if we trace back the causes of physical effects, it seems that we will never have to leave the realm of the physical. And this seems to leave no room for non-physical properties, such as the conscious properties of experience, to make any difference to your behaviour. Since your behaviour is already fully accounted for by physical antecedents, any distinct conscious goings-on would seem to be casual danglers, themselves irrelevant to subsequent events.

They would be like the toy steering-wheel which the infant on the passenger seat fondly imagines is controlling the car.



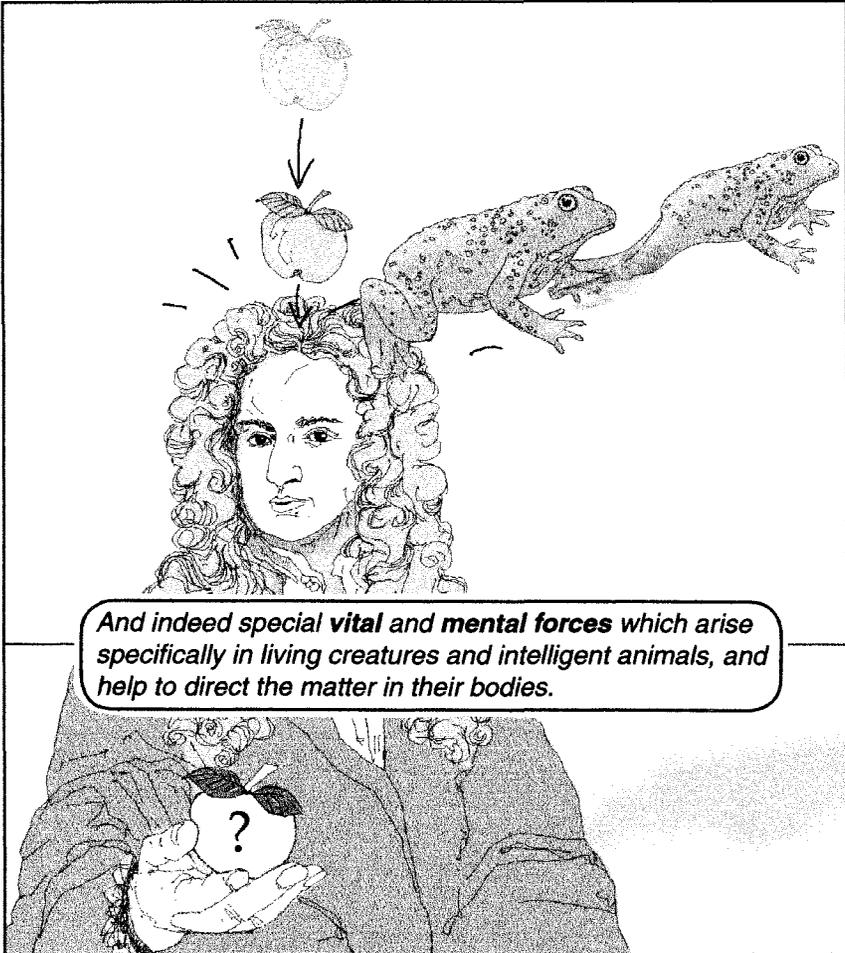
The problem of squaring dualism with the causal completeness of physics is not entirely new. It was also widely recognized as a problem by 17th-century dualists. Surprisingly, Descartes himself seems not to have been worried by this aspect of mind-body interaction. But his immediate successors were not slow to point out that the deterministic physics of the 17th century ruled out any possibility of mind influencing matter.



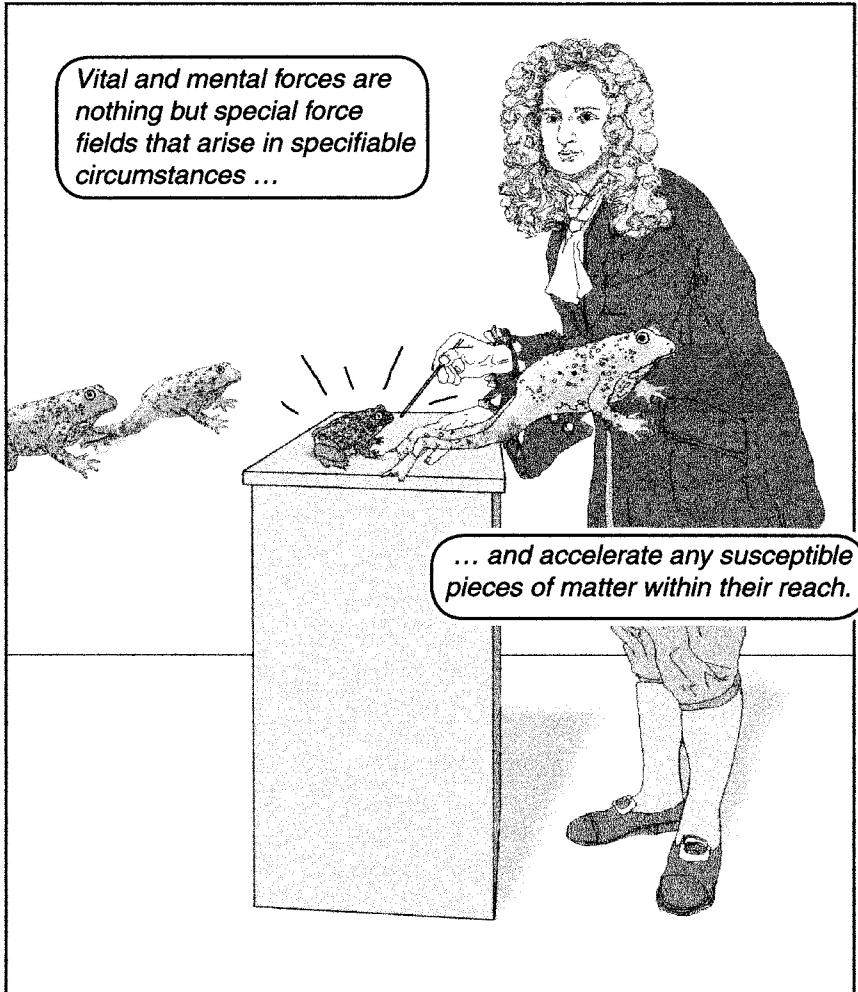
Newtonian Physics

Curiously, this physics-based argument against dualism lost its force during the 18th and 19th centuries. This is because the austere physics of Descartes and Leibniz, in which all changes of material motion are due to contact between bodies, was replaced by the more liberal world view of **Sir Isaac Newton** (1642–1727).

Newtonian physics admits immaterial forces acting at a distance. The most famous of these is gravity. But Newton and his followers were prepared to admit many other such forces, like chemical forces and forces of adhesion.



It is only relatively recently that such special vital or mental forces have come to seem cranky. In the heyday of Newtonian science, such forces were part of the stock-in-trade of orthodox biologists and physiologists. They were regarded as no more mysterious than gravity or magnetism.



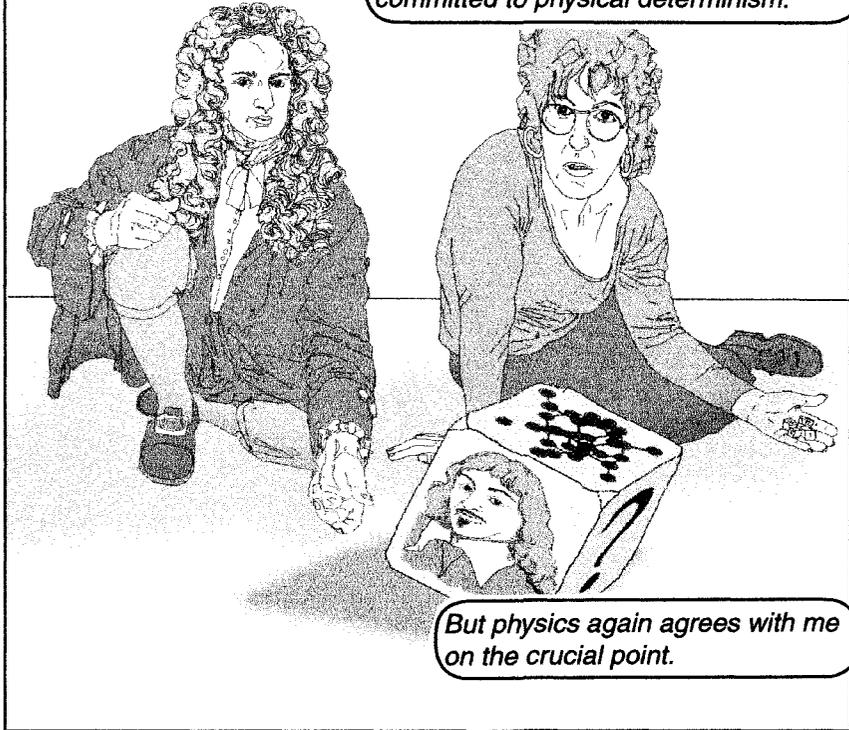
This idea of special “configurational” forces, which arise when matter is arranged in the complex patterns found in living bodies and intelligent brains, was preserved well into the 20th century. It is a central theme in the “emergentist” philosophy defended by **C.D. Broad** (1887–1971), author of *Mind and its Place in Nature* (1923) and Professor of Philosophy at Cambridge until 1953.

Back to Descartes

Physics has now moved back from Newtonian liberality to Cartesian austerity, and removed the mind from the class of causes with the power to move the body. True, we have not quite gone back to the original Cartesian view that all action is due to contact between bodies.

We still have forces which act at a distance.

And the chanciness of modern quantum mechanics means that we are no longer committed to physical determinism.

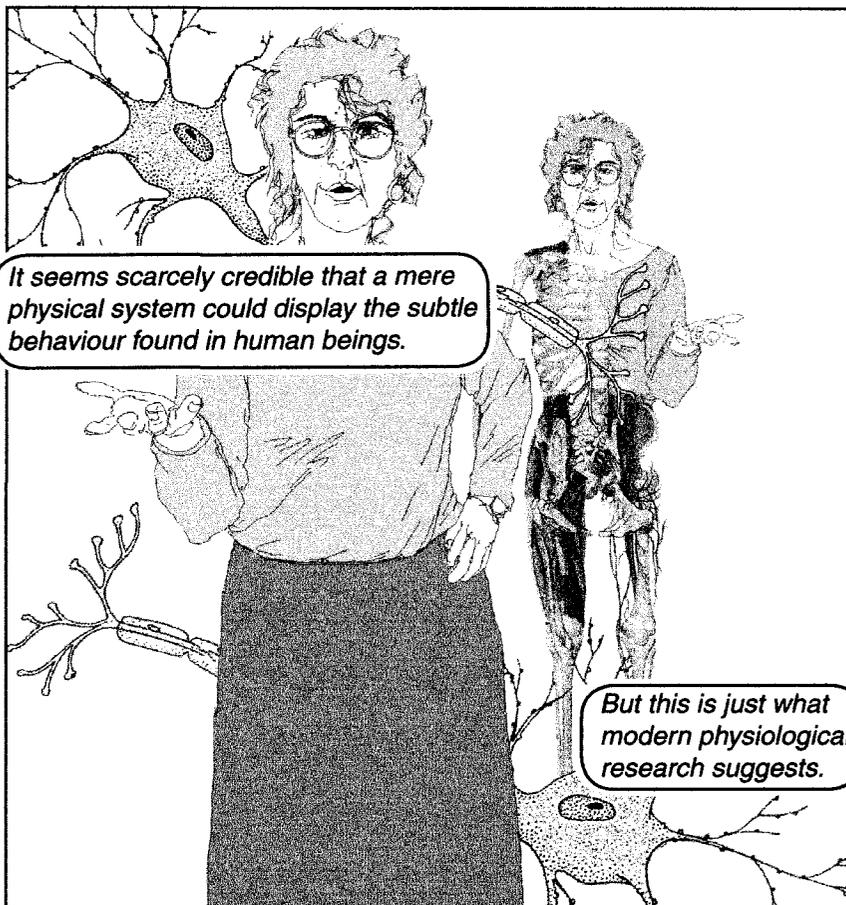


But physics again agrees with me on the crucial point.

The causes of material effects are always other material causes, not special mental or vital forces. Physics now recognizes three fundamental forces: the strong nuclear force, the electroweak force and gravity. According to contemporary physics, all non-random influences on the motion of matter are due to combinations of these forces. This leaves no room for an independent mind to make any material difference.

Materialist Physiology

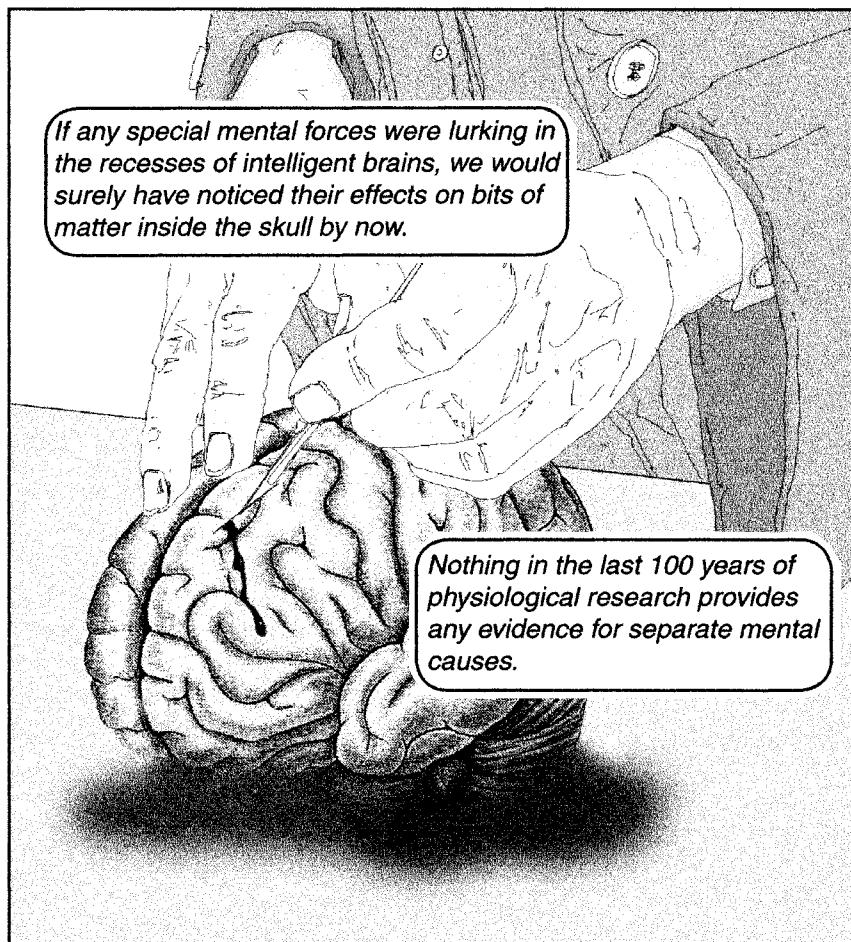
A major influence discrediting special mental forces has been physiological research over the last 150 years. To a casual observer, it may seem obvious that we need some non-physical influence, with distinctive powers of consciousness and rational thought, to account for the elaborate speech and insightful decision-making of human beings.



An awful lot is now known about what goes on inside the brain. During the first half of the 20th century, neurophysiologists mapped the body's neuronal network and analysed the electrical mechanisms responsible for neuronal activity. And since then, a great deal more has become known about the chemistry of nerve cells, and especially about the neurotransmitter molecules which such cells use to communicate with each other.

No Separate Mental Causes

Of course, this detailed physiological research still leaves a great deal to be understood, especially about how all the bits fit together to direct intelligent behaviour. But it does make it seem unlikely that there are special mental force fields.

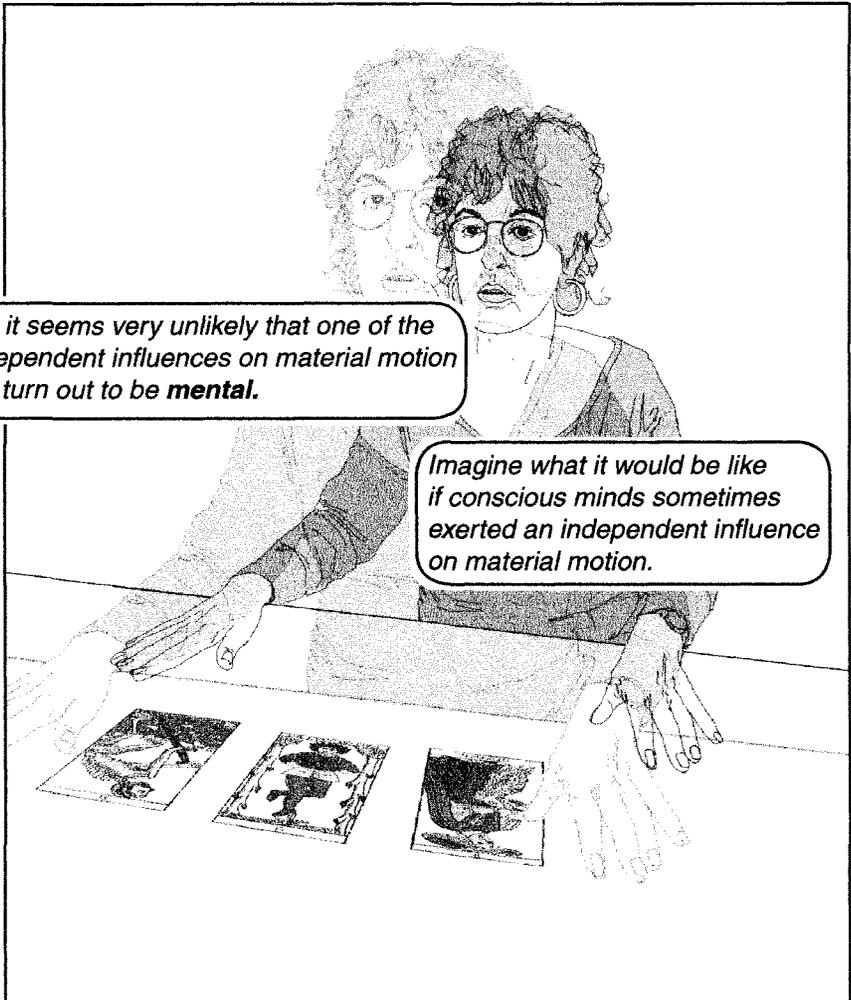


If any special mental forces were lurking in the recesses of intelligent brains, we would surely have noticed their effects on bits of matter inside the skull by now.

Nothing in the last 100 years of physiological research provides any evidence for separate mental causes.

There have been a few late 20th-century hold-outs prepared to deny the causal completeness of physics. Two of the most eminent physiologists of the century, the Nobel prizewinners **Sir John Eccles** (1903–97) and **Roger Sperry** (1913–94), both defended this line. They maintained that the conscious mind is separate from the brain and sometimes exerts an independent influence on its operations.

But few thinkers at the end of the 20th century still believe this. The idea of independent mental influences may once have been respectable, but by now the evidence against them seems overwhelming. Of course, modern physics may well be wrong about its precise current list of fundamental forces. Maybe there will turn out to be more than three fundamental forces – or a few less.

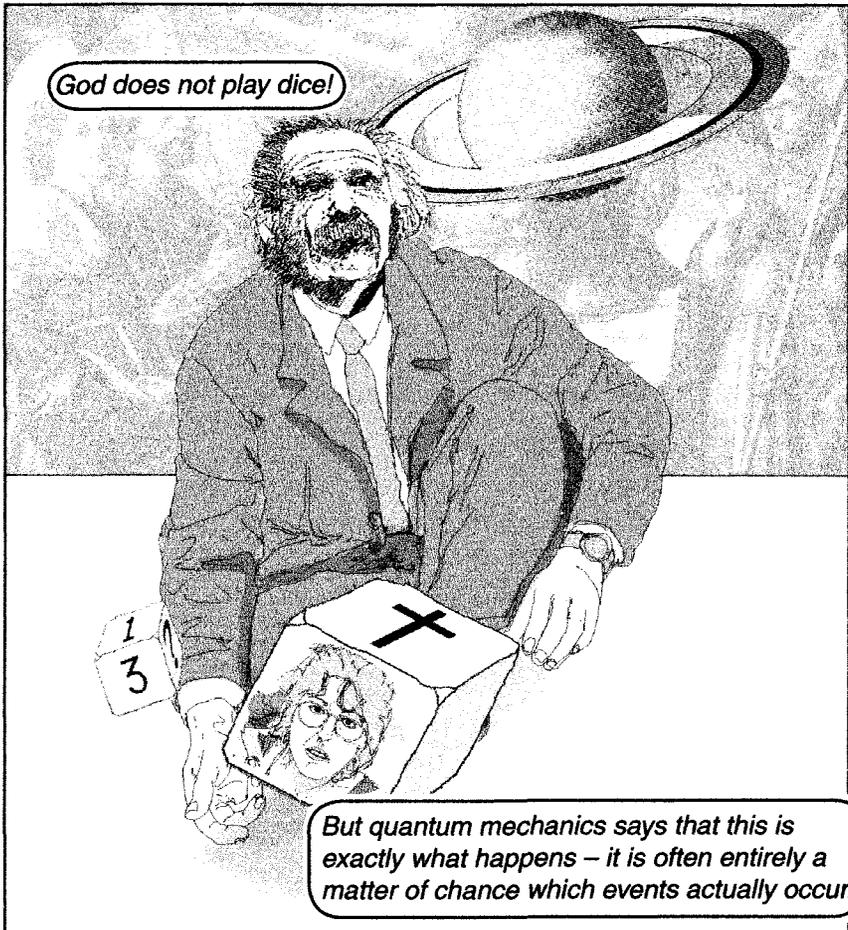


Bits of matter in the brain – neurotransmitter molecules perhaps – would sometimes accelerate in ways that could not be accounted for by orthodox physics. The idea is not incoherent. But if it were true, modern physical science would be very surprised indeed.

What About Quantum Indeterminism?

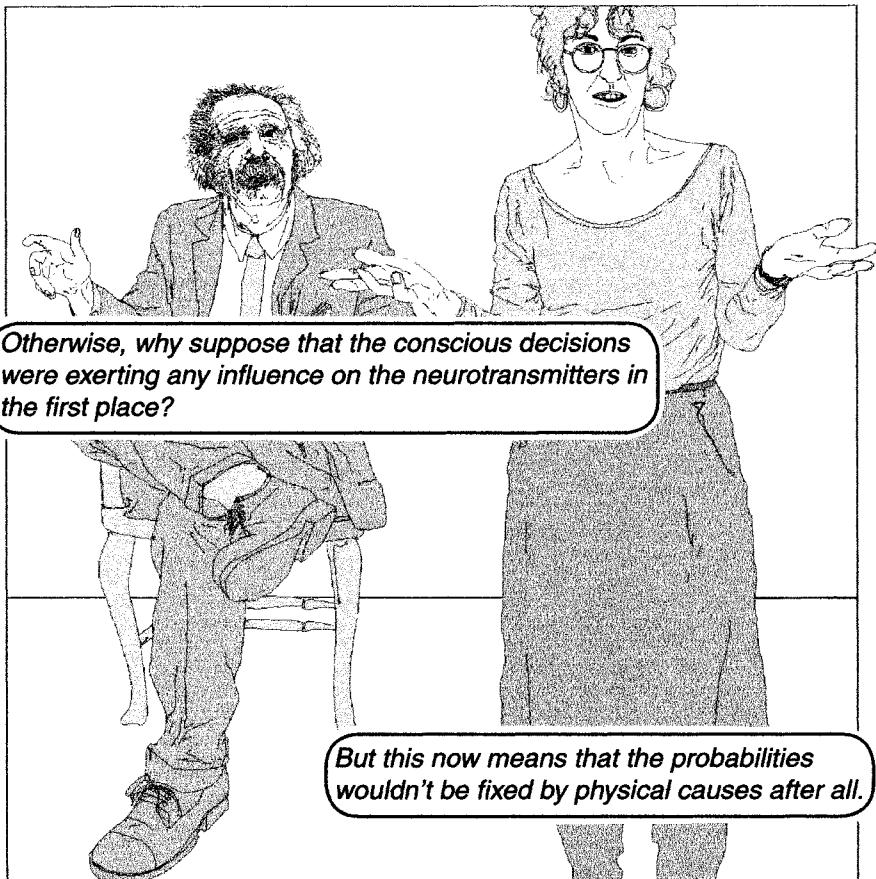
Doesn't the indeterminism of modern quantum mechanics create a loop-hole which allows the mind to make a material difference?

According to quantum mechanics, many physical events, including events in the brain, are not **determined** by prior physical causes. At most, the prior physical causes fix the **probabilities** for various possible results. **Albert Einstein** (1879–1955) hated this idea.



Still, this quantum mechanical indeterminism doesn't really help dualism. As long as prior physical causes so much as fix the **probabilities** of physical results, independent mental influences will still be ruled out.

Imagine, for the sake of argument, that independent conscious events – conscious decisions, perhaps – did take advantage of the indeterministic space created by quantum mechanics to influence the movements of neurotransmitters in the brain. Then presumably such neurotransmitter movements would occur more often when preceded by those conscious decisions than when not.



God's dice game would be rigged. Conscious decisions would be loading the dice. Less metaphorically, independent conscious causes would be affecting the probabilities of physical results. This would be a violation of the quantum version of the causal completeness of physics, the principle that the probabilities of physical results are fixed by prior physical causes alone. As before, this possibility is not incoherent. But, once more, modern physical science would be very surprised indeed if it turned out to be true.

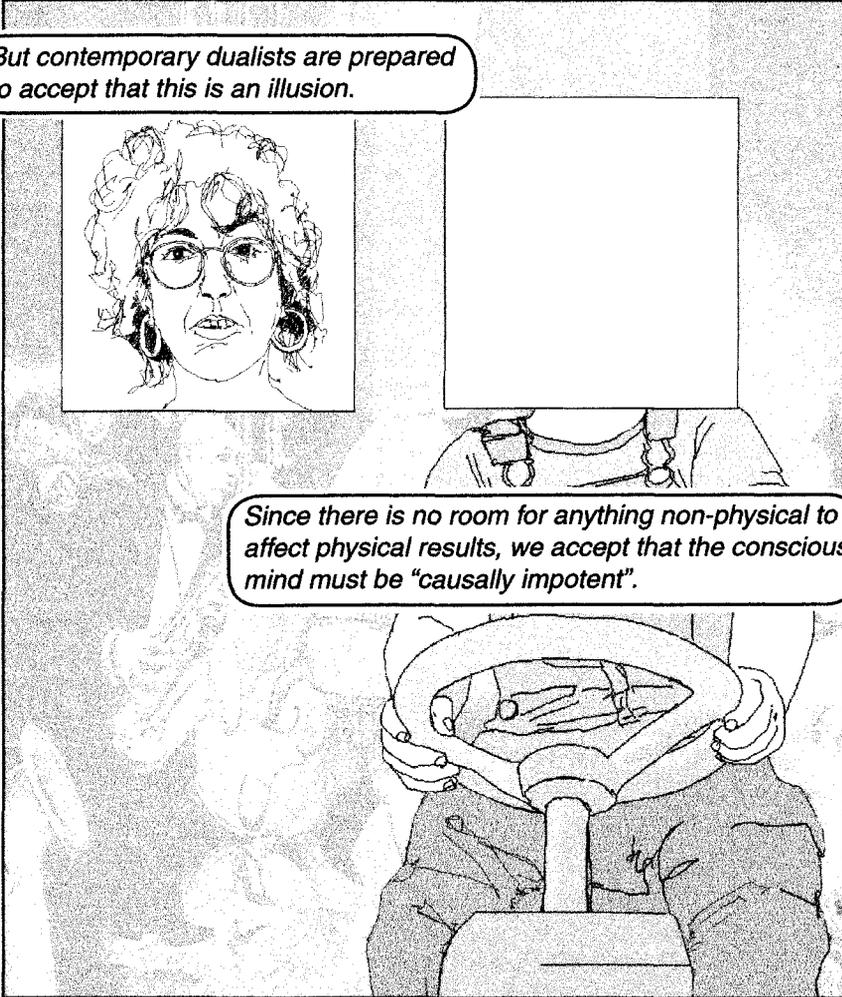
Causal Impotence

Most contemporary dualists adopt a different line in the face of the causal completeness of physics. They simply accept that the mental does not, after all, exert any causal influence on the material world. It might seem like the merest common sense to suppose that our conscious feelings and sufferings, our hopes and decisions, affect the movements of our bodies, and hence the rest of the physical world.

But contemporary dualists are prepared to accept that this is an illusion.



Since there is no room for anything non-physical to affect physical results, we accept that the conscious mind must be "causally impotent".



We are indeed like the child with a toy steering-wheel. We think we are running the show, but we are not.

Pre-established Harmony

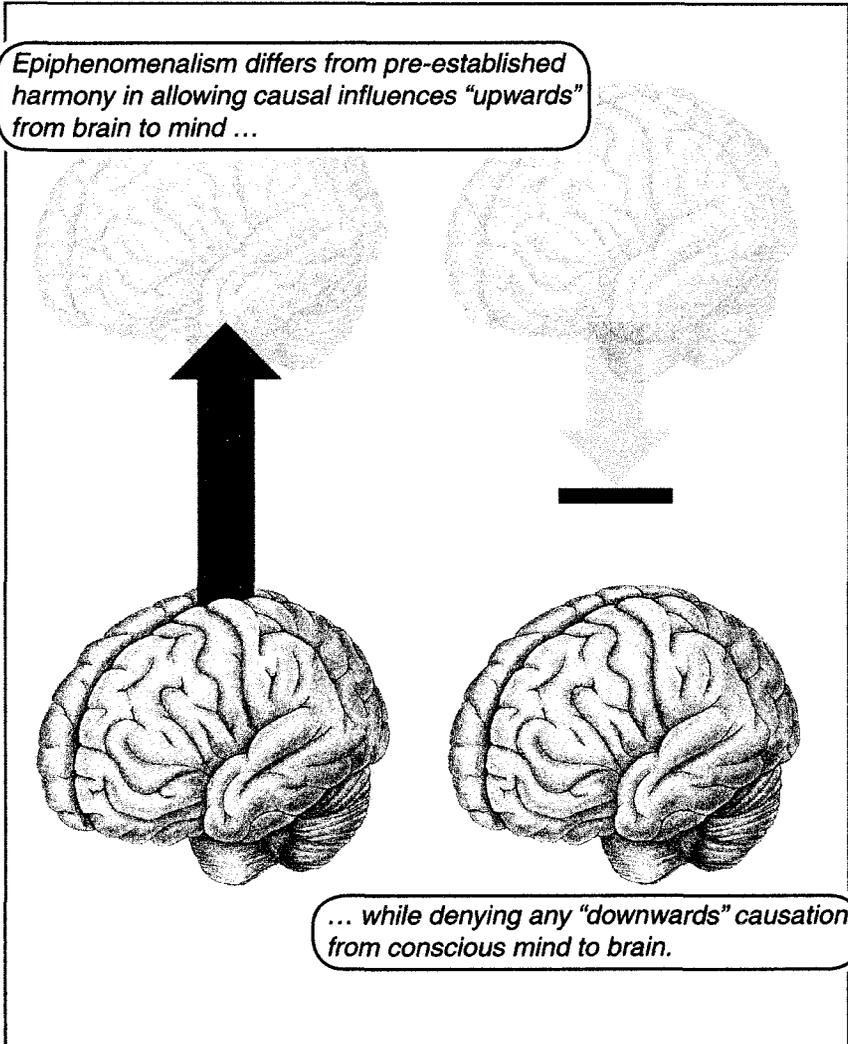
An early version of this position was developed in the 17th century by Leibniz. Recall that Leibniz urged the causal completeness of the physical world against Descartes. Leibniz concluded that mind and matter cannot really influence each other, and that the appearance of interaction must be due to **pre-established harmony**. By this Leibniz meant that God must have arranged things to make sure that mind and matter always keep in step. In reality they do not interact, like two trains running on separate tracks.



God's plan ensures that conscious decisions are always followed by appropriate physical movements, and sitting on a drawing pin is always followed by a conscious pain.

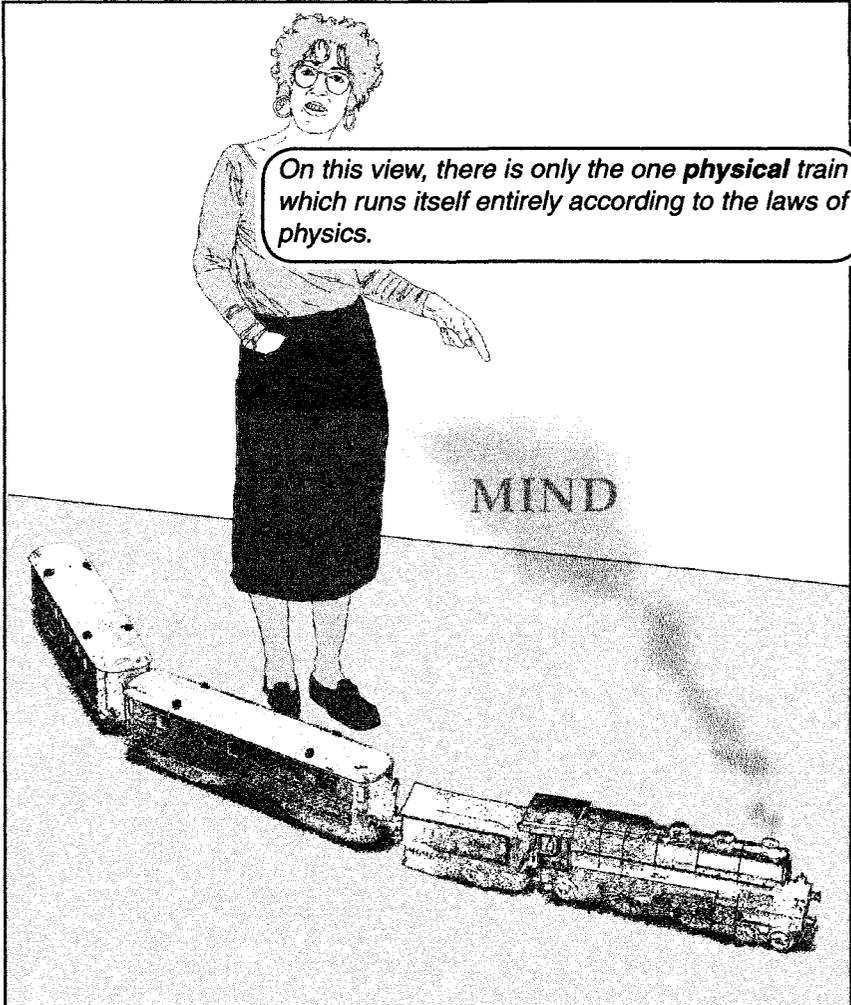
Modern Epiphenomenalism

Modern dualists prefer a rather simpler way of keeping mind and matter in step. This is **epiphenomenalism**, which does not require advance planning by an omniscient being.



This respects the causal completeness of physics: nothing non-physical causally influences the physical brain. But it avoids Leibniz's theological complications by allowing the brain itself to cause conscious effects.

According to epiphenomenalism, the conscious mind is an “epiphenomenon” of the brain, a “dangler” caused by the brain, but with no power to influence the brain in return. The brain is influenced by prior physical causes alone. Everything in the brain would work the same, even if it did not give rise to conscious mental experience. As it happens, it does give rise to conscious experience, but this makes no difference to its physical workings.

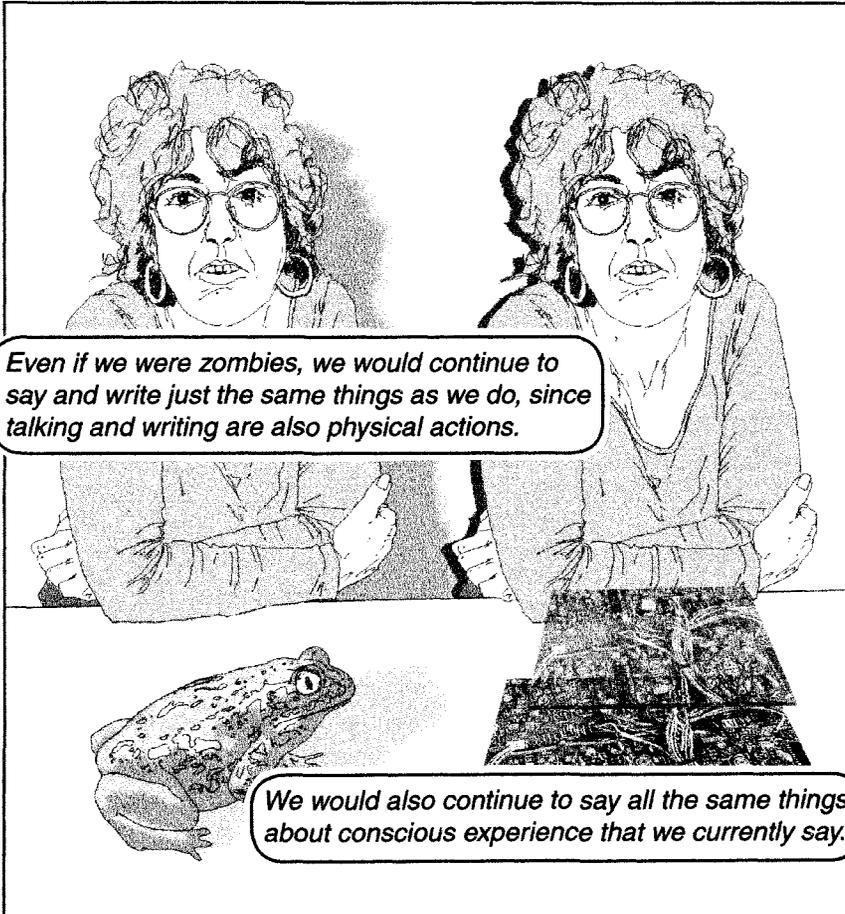


But at the same time, it emits puffs of immaterial “mental smoke” which are real enough at the conscious level, but make no difference to the subsequent motion of the train.

The Oddity of Epiphenomenalism

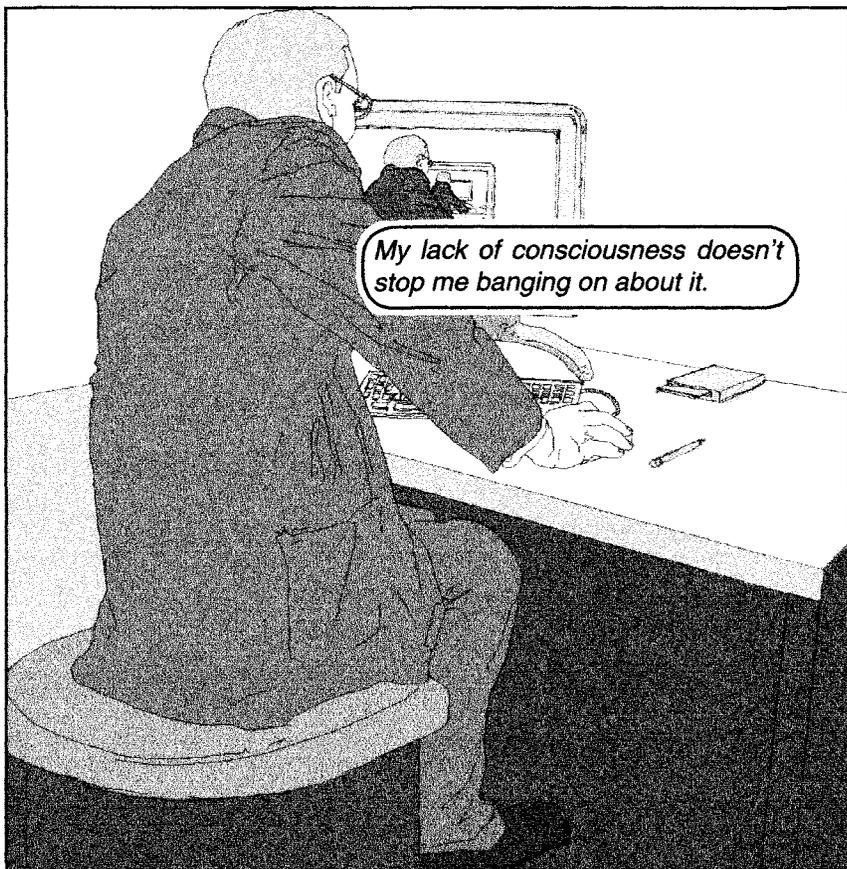
Epiphenomenalism is not a particularly attractive position. It implies, for instance, that the conscious thirst you feel on a hot day plays no part in causing you to go to the fridge for a beer. Since your going to the fridge is a physical event, and as such entirely due to physical causes in your brain, the distinct conscious thirst cannot influence your action.

Epiphenomenalism has even more surprising consequences. If conscious mental states don't have any influence on our behaviour, then it follows that our behaviour would continue just the same, even if we were zombies – even if the activities in our brain were unaccompanied by any conscious feelings.



Yet, by hypothesis, we wouldn't have any conscious experiences ourselves. Our zombie mouths would simply be driven by the same physical processes that drive normal human mouths. David Chalmers makes the point graphically. He points out that his zombie counterpart would carry on just like the actual David Chalmers.

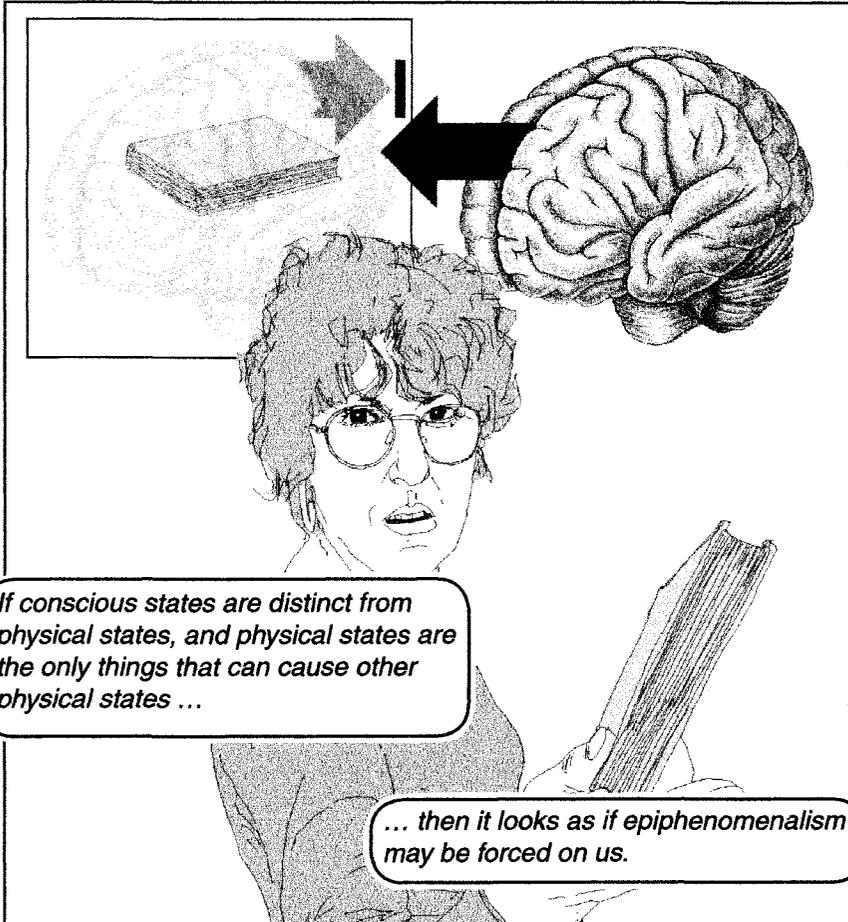
"He talks about conscious experience all the time - in fact he seems obsessed by it. He spends ridiculous amounts of time hunched over a computer, writing chapter after chapter on the mysteries of consciousness. He often comments on the pleasure he gets from certain sensory qualia, professing a particular love for deep greens and purples. He frequently gets into arguments with zombie materialists, arguing that their position cannot do justice to the realities of conscious experience. And yet he has no conscious experience at all!" (Chalmers, *The Conscious Mind*.)



The Materialist Alternative

It is hard to accept the epiphenomenalist doctrine that our conscious experience plays no part in causing our behaviour. This doctrine seems especially absurd when applied to the verbal behaviour which we normally interpret as describing our conscious experiences.

Still, is there any alternative?



The most popular alternative is to query whether conscious states are really distinct from physical states to start with. This is the **materialist** option. Its obvious virtue is that it promises to restore causal potency to conscious experience.

If conscious states *are* just physical brain states, then they will have all the physical effects that those brain states have. Nor need we be puzzled by zombies who prattle away about their experiences.



So materialism promises to avoid the drawbacks of epiphenomenalism. Is materialism a real option, though? What about the earlier arguments, due to Saul Kripke and Frank Jackson, which aimed to establish that conscious states *must* be different from brain states? We will need to re-examine these arguments, if materialism is to prove an alternative to epiphenomenalism.