

# Materialism of the Gaps

If the tools of science cannot detect a state of consciousness, does this mean consciousness does not exist? B. ALAN WALLACE examines the gap in scientific understanding.

Virtually all cognitive scientists today assume that consciousness and all subjectively experienced mental processes are functions of the brain, and are therefore emergent properties or functions of matter. This is the mainstream scientific view of consciousness, and those who reject this hypothesis are commonly viewed by many scientists as being in the grip of a metaphysical bias or religious faith.

To evaluate this scientific perspective, let's first review some simple, uncontested facts: Scientists have (1) no consensual definition of consciousness, (2) no means of measuring it or its neural correlates, and (3) an incomplete knowledge of the necessary and sufficient causes of consciousness. The fact that no state of consciousness – in fact, no subjectively experienced mental phenomenon of any kind – is detectable using the instruments of science means that, strictly speaking, there is no scientific, empirical evidence for the existence of consciousness or the mind. The only experiential evidence we have for the existence of mental phenomena consists of reports based on first-person, introspective observations of one's own mental states. But such first-person accounts are not objective, they are not subject to third-person corroboration, and they are generally presented by people with no formal training in observing or reporting on their own mental processes. Yet without such anecdotal evidence for the existence of mental phenomena, scientists would have no knowledge of the mental correlates of the neural and behavioral processes that they study with such precision and sophistication. In other words, the whole edifice of scientific knowledge of mental processes that arise in dependence upon brain functions is based on evidence that is anecdotal and unscientific.

Ironically, scientists' metacognitive awareness of their own thought processes is itself nonobjective and therefore unscientific. But without such reflexive awareness, it is hard to imagine that scientific knowledge would progress at all.

In the absence of scientific knowledge of the nature of consciousness and its necessary and sufficient causes, mainstream cognitive scientists insist that there must be a physical explanation for the nature of consciousness and all its causes. When it comes to consciousness and all subjective experience, there is a gap in scientific knowledge, and this vacuum is swiftly filled with the assumptions of materialism; for scientists abhor such a vacuum.

This problem has been dealt with in different ways over the past century. When behaviorists began to dominate academic psychology in the early twentieth century, they recognized the obvious fact that subjective mental processes and states of consciousness could not be objectively measured with the tools of science. Rather than developing the sole means of observing such mental phenomena – namely, introspection – they opted for the astounding alternative of denying that subjective experience exists at all! In 1913, John B. Watson, a pioneer of behaviorism, went so far as to attribute the belief in the existence of consciousness to ancient superstitions and magic. And forty years later, B. F. Skinner concluded that *mind* and *ideas* are nonexistent entities “invented for the sole purpose of providing spurious explanations ... Since mental or psychic events are asserted to lack the dimensions of physical science, we have an additional reason for rejecting them.” Rather than acknowledge that there was a gap in the scientific understanding of the mind, two generations of behaviorists denied that such a

gap even exists. How they knew that they believed this remains a mystery, for, if they truly believed what they wrote, they wouldn't know they held such beliefs until they wrote them down or expressed them in some other behavior! Even today, eliminative materialists, such as Paul and Patricia Churchland, maintain this tradition of denial, declaring that all subjective experience is illusory, for it is undetectable to third-person, scientific means of observation. Such scientists and philosophers are so firmly in the grip of their materialistic faith that they deny there is even a gap in scientific knowledge when it comes to subjective experience.

The heyday of behaviorism has passed, and it has been replaced by neuroscience, which generally acknowledges that mental processes do exist, and are not yet scientifically understood. This is an indication of progress, for now the gap in scientific knowledge is at least acknowledged. The only empirical evidence we have for mental phenomena remains first-person, introspective reports, yet neuroscientists today continue to marginalize this mode of observation as being unscientific. In a sense, they are right. The subjects they study in their laboratories, and on whose first-person reports they rely, are not professionals. They are commonly undergraduate students (or patients with mental illnesses or brain damage) with no formal training in observing their own minds or in reporting what they experience. So the entire science of identifying the neural correlates of mental processes is based on unscientific, anecdotal, empirical evidence.

Some neuroscientists declare that they are “indirectly” observing mental processes when they measure their neural correlates, much as particle physicists indirectly observe elementary particles by measuring their tracks in a bubble chamber. But this is a false analogy. The characteristics of elementary particles are inferred on the basis of their macroscopic effects generated by linear accelerators and other systems of measurement. There is no way to observe the particles themselves, except by way of their traces in bubble chambers, and so on. So everything we know about such particles is based on these observable, physical effects.

But when it comes to the mind, we do have experiential access to observing certain mental phenomena themselves, such as thoughts, mental images, dreams, and other mental states. And when we observe them directly, we find that they have no physical characteristics at all. They have no observable mass or location in space, nor do they have any atomic structure or any other physical characteristics. Although they arise in dependence upon specific brain processes, this

The four types of action  
are mind itself.  
They do not exist apart from  
mind and mind does not exist.  
Ultimately there are  
no distinctions  
And neither do color nor  
form exist ...

– Palden Lhamo Ser-kyim Practice



**B. Alan Wallace:** “The whole edifice of scientific knowledge of mental processes that arise in dependence on brain functions is based on evidence that is anecdotal and unscientific.”

in no way logically implies that they are located in the same place as those causal neural events. In short, the only empirical evidence we have regarding mental phenomena – namely, first-person experience – indicates that they are not physical.

Yet, despite this fact, mainstream cognitive scientists insist that they must be physical in nature. In other words, they compulsively fill their gap in understanding with their belief that all phenomena have a physical explanation.

We can find a parallel for this attitude in the history of physics. From the time of Galileo until the late nineteenth century, physicists had been enormously successful in devising mechanical explanations for all manner of natural phenomena. Classical mechanics seemed to be the key for understanding the whole of nature. But there was an explanatory gap when it came to understanding the propagation of electromagnetic fields in empty space. This gap was filled by positing the existence of a luminiferous ether, for which there was no empirical evidence whatsoever. But in 1887, a decisive experiment was conducted that demonstrated beyond all reasonable doubt that no such ether exists. This implied that there was no mechanical explanation for electromagnetism. The later development of quantum physics further demonstrated that mechanical explanations are inapplicable when it comes to non-locality and other aspects of the quantum world. Mechanical explanations are still useful for a limited range of natural phenomena, but not for the whole of nature.

Scientists know far less about mental phenomena than they do about electromagnetic fields, which they can at least measure. But the terms “neural mechanisms” that “underlie” mental processes is in common usage, as if neuroscientists are already formulating mechanical explanations for the generation of mental phenomena. But nothing could be further from the truth. Scientists don’t know what it is about neural processes that enables them to either generate or influence mental events. This is commonly known as the “explanatory gap,” regarding the mind/body problem, but that gap is swiftly filled with materialistic assumptions, despite the fact that introspective observations suggest that mental phenomena do not bear physical attributes.

The gap in scientific understanding of the influence of the brain on the mind is matched by an even greater vacuum of knowledge when it comes to understanding how subjectively experienced mental processes influence the brain and the rest of the body. Many, but not all, neuroscientists insist that the mind is a passive epiphenomenon of the brain, and therefore has no causal efficacy at all. Yet the scientific community spends millions of dollars each year trying to exclude the “placebo effect” when determining, for example, the efficacy of pharmaceutical drugs on the body. This euphemism, “the placebo effect,” naturally suggests that the effect in question is created by the placebo. But if the physical substance of the placebo actually exerted such effects, it

would, by definition, not be a placebo! The true causes of so-called placebo effects are subjectively experienced mental processes such as hopes, expectations, and desires. But instead of calling these effects by their accurate name – “mental effects” – they are attributed to the one thing that, by definition, is not producing those effects – namely, the placebo. At least it has the advantage of being physical! Such misleading language indicates the lengths to which the ideological commitment to materialism skews scientific inquiry.

Like naïve religious believers who propose divine, or supernatural, explanations for gaps in scientific understanding, those in the grip of their faith in scientific materialism propose materialistic explanations to fill such gaps. If scientists had no other way to study mental phenomena other than their familiar, third-person systems of measurement, their insistence on finding physical explanations for everything they study would be understandable. But when they marginalize introspection – the sole means of observing mental phenomena – instead of developing it into a rigorous means of scientific observation, they replace the spirit of empiricism with a dogmatic adherence to uncorroborated assumptions, which has always been the bane of scientific progress.

Perhaps a physical explanation for consciousness will one day be formulated. Or perhaps when scientists eventually understand the nature and origins of mental phenomena, they will find that physical explanations are as inapplicable to consciousness as mechanical explanations are to electromagnetic fields. We don’t know what the future will hold, but rather than insisting that consciousness conform to their metaphysical assumptions, scientists should be equally open to physical and nonphysical explanations for the mind. And since they have made so little progress in refining introspection as a means of scientific inquiry, they may well benefit from collaborating with other disciplines of inquiry, such as the contemplative tradition of Buddhism, that have a long history of developing first-person methods for observing and transforming the mind. ☉

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*Wallace recently gave a lecture titled “Toward the First Revolution in the Mind Sciences” at Google Headquarters in Mountain View, California. Google has posted this lecture online. Search for Google TechTalks Alan Wallace.*