

Consciousness Is Eternal, Infinite, and One

Larry Dossey, MD

One night, as a six-year-old, I lay sleepless in our farmhouse on the bleak Central Texas prairie. I peered out the window at the canopy of stars shimmering in the night sky. I vividly remember the astonishment of being *aware* of them. Although I did not know grown-up words such as “consciousness,” I was simply amazed that I could *know* something, anything. My mind could have been a complete blank, but it wasn’t; but *why* did there appear to be something rather than nothing? What was this awareness thing, and where did it come from? If no one were aware of anything, would anything still be there? And where did my awareness go when I went to sleep? These thoughts returned night after night, but never with any answers.

Perhaps you too experienced thoughts like these as a child, because they involve archetypal questions that have surfaced throughout recorded history. They can be distilled to the basic query that is the title of this book: *what is consciousness?*

Different cultures have found various ways of exploring this great question. An approach I favor is not to define meticulously what consciousness is (as if this were possible), but to describe how consciousness behaves, how it shows itself, how it manifests in the world. Scientists do this routinely. For example, physicists can’t really say what an electron is, but they have discovered features such as its mass, velocity, charge, and how it behaves under certain conditions. We can approach consciousness in the same way. We may not be able to offer a precise definition, but we can observe how it manifests in people’s lives and in actual experiments, then form opinions about its nature, origin and destiny.

Despite our best efforts, however, our knowledge of consciousness will always be incomplete and therefore tinged with mystery. I am happy to acknowledge mystery in life, and I hope you are too, because this will assist us as we proceed by making us more flexible and less dogmatic. Mystery is ineradicable, and creatures with limited, finite intelligence — all of us — will do well to make peace with mystery early on. I choose to celebrate mystery, because in doing so it becomes friendlier and less formidable. Mystery, after all, is the source of surprise and delight on those extraordinary occasions when the unknown becomes known. On the heavy wooden beams of a hallway in our home, I have stenciled in Old English script a statement that honors mystery: “Something unknown is doing we don’t know what.” This observation always makes me smile and is my way of bowing to the great unknowns. It is a comment by astrophysicist Sir Arthur Eddington and refers to certain baffling features of quantum physics, but I like to apply it to life in general.

Our human limitations also warrant humility. William James, the father of American psychology and one of the great modern investigators of consciousness, understood the need for humility in this task. He was concerned with not only what we know, but what we *can* know. James must have been a pet lover. He said, “I

firmly disbelieve, myself, that our human experience is the highest form of experience extant in the universe. I believe rather that we stand in much the same relation to the whole of the universe as our canine and feline pets do to the whole of human life. They inhabit our drawing-rooms and libraries. They take part in scenes of whose significance they have no inkling. They are merely tangent to curves of history the beginnings and ends and forms of which pass wholly beyond their ken. So we are tangents to the wider life of things.”¹

For those readers who nonetheless want to carry with them an image or definition of consciousness through the pages that follow, I offer the following observation from one of India’s preeminent contemporary philosophers and consciousness researchers, K. Ramakrishna Rao. Many Western scientists and philosophers share Professor Rao’s views, as we shall see:

Consciousness in the Indian tradition is more than an experience of awareness. It is a fundamental principle that underlies all knowing and being.... The cognitive structure does not generate consciousness; it simply reflects it; and in the process limits and embellishes it. In a fundamental sense, consciousness is the source of our awareness. In other words, consciousness is not merely awareness as manifest in different forms but it is also what makes awareness possible. It is said in *Kena Upanisad* that consciousness is the ear of the ear, the thought of the thought, the speech of the speech, the breath of the breath and the eye of the eye.... Consciousness is the light which illumines the things on which it shines.²

I never grew out of my childhood fascination with consciousness. My interest became more intense. This infatuation has followed me throughout my career as an internal medicine physician steeped in the life sciences. Much of my adult life has been spent taking care of sick and dying and wounded patients in emergency rooms, critical care units, and war zones. These experiences have brought questions about consciousness into sharpened focus, and they have intensified the relevance of consciousness in my life. In this journey, a picture of consciousness has evolved for me: consciousness as eternal, infinite, and one.

For your consideration, here are some of the reasons why.

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Despite the towering intellectual and technological achievements of twentieth-century science, its spell over us has been irreversibly weakened. There are at least two important reasons for this. First, scientist and layman alike

have become aware of the limits and shortcomings of scientific knowledge. Second, we realize that our perpetual hunger for spiritual understanding is real and undeniable. It can neither be defined away by subtle logic, nor be satisfied by viewing the universe as sterile, mechanistic, and accidental.³

— Roger S. Jones, *Physics as Metaphor*

The most urgent issue we humans face is how we conceive ourselves — whether as complex lumps of matter guided by the so-called blind, meaningless laws of nature, or as creatures who, although physical, are also imbued with something more: consciousness, mind, will, choice, purpose, direction, meaning and spirituality, that difficult-to-define quality that says we are connected with something that transcends our individual self and ego. Every decision we make is influenced by how we answer this great question: Who are we?

There is growing awareness that the endless arguments between proponents of these two views are more than hairsplitting disagreements among experts, but they have real consequences for our future on earth, and perhaps whether we shall have a future.⁴ As novelist and statesman André Malraux (1901-1978) said, the twenty-first century will be spiritual, or it will not be.⁵

Vaclav Havel (1936-2011), the author, poet, playwright and diplomat who was the first president of the Czech Republic, saw a hell looming in our world and had the guts to say so on the international stage. As a potential solution, he said, “It seems to me that one of the most basic human experiences, one that is genuinely universal and unites — or, more precisely, could unite — all of humanity, is the experience of transcendence in the broadest sense of the word.”⁶ Havel endorsed what he called “responsibility to something higher.” In a speech to a joint session of the United States Congress on February 21, 1990, he said:

Consciousness precedes Being, and not the other way around.... [F]or this reason, the salvation in this human world lies nowhere else than in the human heart.... Without a global revolution in the sphere of human consciousness, nothing will change for the better in the sphere of our being as humans, and the catastrophe toward which this world is headed — be it ecological, social, demographic or a general breakdown of civilization — will be unavoidable. If we are no longer threatened by world war or by the danger that the absurd mountains of accumulated nuclear weapons might blow up the world, this does not mean that we have definitely won. We are still capable of understanding that the only genuine backbone of all our actions, if they are to be moral, is responsibility. *Responsibility to something higher* than my family, my country, my company, my

success — responsibility to the order of being where all our actions are indelibly recorded and where and only where they will be properly judged (emphasis added).⁷

There are vibrant developments in key areas of science that show real promise in humankind's search for, and responsibility to, something higher. There are solid reasons to believe that Havel's "global revolution in the sphere of human consciousness" may be closer than we think — that, after three centuries of a flirtation with, and seduction by, a purely physical view of who we are, another view is emerging.

THE FACE OF PHYSICALISM, THE MASK OF MATERIALISM

Physicalism is the doctrine that the real world consists simply of the physical world. Its close cousin is materialism, the creed that nothing exists except matter and its movements and modifications, as well as the doctrine that consciousness and will are wholly due to material agency.⁸ These terms are often used interchangeably, as I shall do here.

What do physicalism and materialism actually look like? It is a multifaceted view in which, as astrophysicist David Lindley has said, "We humans are just crumbs of organic matter clinging to the surface of one tiny rock. Cosmically, we are no more significant than mold on a shower curtain."⁹ Spirituality, the sense of connectedness with something that transcends the individual self, is equated in this view with self-deception, fantasy or hallucination. In this outlook, meaning, direction, purpose and free will are absent. As philosopher Daniel Dennett puts it, "When we consider whether free will is an illusion or reality, we are looking into an abyss. What seems to confront us is a plunge into nihilism and despair."¹⁰ Physicalism involves the presumption that the everyday idea of mind is an exaggerated, unnecessary concept — that, according to linguist Karen Stollznow, "Thinking is just the meat talking to itself. It's generated by the brain and when we die, unfortunately that dies with us. We can state that categorically."¹¹ Or as philosopher Dennett says without a whiff of irony in his book *Consciousness Explained*, "We're all zombies. Nobody is conscious."¹² And as the Nobel Prize-winning molecular biologist Francis Crick confidently proclaimed, "[A] person's mental activities are entirely due to the behavior of nerve cells, glial cells, and the atoms, ions, and molecules that make up and influence them."¹³ Similarly, astronomer Carl Sagan unequivocally stated, "[The brain's] workings — what we sometimes call mind — are a consequence of its anatomy and physiology, and nothing more."¹⁴ And as psychiatrist and sleep researcher Allan Hobson asserted, "Consciousness, like sleep, is of the Brain, by the Brain, and for the Brain."¹⁵ In sum, physicalism and materialism constitute a bleak vision in which, as Nobel Prize-winning physicist Steven Weinberg said, "The more the universe seems comprehensible, the more it also seems pointless."¹⁶

A few science insiders have considered religion and spirituality as relatively immune from the corrosive influence of physicalism. For example, as astrophysicist Sir Arthur Eddington remarked in his Swarthmore Lecture in 1929, "Dismiss the idea that natural law may swallow up religion; it cannot even tackle the multiplication table single-handed."¹⁷

Others suggest that the intractable mind-versus-matter debate rests on semantic misunderstandings and is overblown. Among them is the British anti-materialist philosopher Mary Midgley, who said:

The real trouble with the mind-body problem centers on the word "materialism." This word is itself a relic of dualism: it suggests that there are two rival stuffs—mind and matter—competing to be seen as basic to the world. It tells us to choose one of these and reduce the other to it. There are not two such separate stuffs. There is just a complex world containing complex creatures, about whom many sorts of questions arise. Each question must be answered in its own terms....But actually our thoughts are quite as real as our coffee cups, and "matter" is every bit as obscure a concept as "mind."¹⁸

It has been difficult to find traction in this debate. The dominant physicalist view that mind and consciousness are products of brain function is served up within contemporary science not as a modest hypothesis or humble conjecture, but as an incontrovertible fact, and anyone who disagrees is likely to be considered an apostate or traitor to science. As consciousness researcher Edward F. Kelly, of the University of Virginia, states in the landmark book *Beyond Physicalism*, "[These] well-meaning defenders of Enlightenment-style rationalism...clearly regard themselves, and current mainstream science itself, as reliably marshaling the intellectual virtues of reason and objectivity against retreating forces of irrational authority and superstition. For them the truth of the [physicalist view] has been demonstrated beyond reasonable doubt, and to think anything different is necessarily to abandon centuries of scientific progress, release the black flood of occultism, and revert to primitive supernaturalist beliefs characteristic of bygone times."¹⁹

Mathematician and philosopher Charles Eisenstein has drawn attention to the condescending mindset that typifies materialists who hold this view:

The unfalsifiable world-view of the [materialist] Skeptic extends far beyond scientific paradigms to encompass a very cynical view of human nature. The debunker must buy into a world full of frauds, dupes, and the mentally unstable, where most people are less intelligent and less sane than he is, and in which apparently honest people indulge in the most outrageous mendacity for no good reason. For the witnesses are, on the face of it, sincere. How can I account for their apparent sincerity? I have to assume either (1) that this apparent sincerity is a cynical cover for the most base or fatuous motives, or (2) they are ignorant, incapable of distinguishing truth from lies and delusion.²⁰

The cynicism that Eisenstein identifies is always liberally seasoned with arrogance. Sir John Eccles (1903-1997), the Nobel Prize-winning neurophysiologist, was one of the most vigorous opponents of physicalism in the debate about the nature of consciousness. He found arrogance to be endemic in this discourse, and he considered it a pathological pollutant — literally a disease:

Arrogance is one of the worst diseases of scientists and it gives rise to statements of authority and finality which are expressed usually in fields that are completely beyond the scientific competence of the dogmatist. It is important to realize that dogmatism has now become a disease of scientists rather than of theologians.²¹

“BEATS THE HECK OUT OF ME”

I must say, modern discussions about the mind are astoundingly parochial. Physicists advocate QM [quantum mechanics], biologists neurons, and good computationalists like myself, computers, each looking with bemused condescension upon their eccentric neighbors. Can we not get some bakers to participate in this forum, who will advocate that the roots of consciousness reside in the eclair?²²

— Joshua Stern, computer scientist

The dogma of materialism suffers from two fatal defects: the sheer poverty of evidence that brains produce consciousness, and the enormous human costs of a world that is sanitized of a spiritual outlook, which the dogma forbids.

No human has ever seen a brain or anything else produce consciousness, and there is no accepted theory as to how this *could* happen. The link between a brain and consciousness is as mysterious today as it was when Thomas Henry Huxley wrote in 1886: "How it is that anything so remarkable as a state of consciousness comes about as a result of irritating nervous tissue, is just as unaccountable as the appearance of the djinn when Aladdin rubbed his lamp in the story."²³ The weakness of the brain-makes-consciousness dogma has become obvious to an increasing number of top-tier scientists, as the following comments demonstrate. I include several examples to show that these are not rare, isolated opinions.

Steven A. Pinker, experimental psychologist at Harvard University, on how consciousness might arise from something physical, such as the brain, stated, "Beats the heck out of me. I have some prejudices, but no idea of how to begin to look for a defensible answer. And neither does anyone else."²⁴ Donald D. Hoffman, cognitive scientist at University of California, Irvine: "The scientific study of consciousness is in the embarrassing position of having no scientific theory of consciousness."²⁵ Stuart A. Kauffman, theoretical biologist and complex-systems researcher: "Nobody has the faintest idea what consciousness is.... I don't have any idea. Nor does anybody else, including the philosophers of mind."²⁶ Roger W. Sperry,

Nobel Prize-winning neurophysiologist: "Those centermost processes of the brain with which consciousness is presumably associated are simply not understood. They are so far beyond our comprehension at present that no one I know of has been able even to imagine their nature."²⁷ Eugene P. Wigner, Nobelist in physics: "We have at present not even the vaguest idea how to connect the physio-chemical processes with the state of mind."²⁸ Physicist Nick Herbert, an expert in nonlocality: "Science's biggest mystery is the nature of consciousness. It is not that we possess bad or imperfect theories of human awareness; we simply have no such theories at all. About all we know about consciousness is that it has something to do with the head, rather than the foot."²⁹ Physicist Freeman J. Dyson: "The origin of life is a total mystery, and so is the existence of human consciousness. We have no clear idea how the electrical discharges occurring in nerve cells in our brains are connected with our feelings and desires and actions."³⁰ Philosopher Jerry A. Fodor, of Rutgers University: "Nobody has the slightest idea how anything material could be conscious. Nobody even knows what it would be like to have the slightest idea about how anything material could be conscious. So much for the philosophy of consciousness."³¹ Philosopher John R. Searle, of the University of California, Berkeley: "At the present state of the investigation of consciousness we *don't know* how it works and we need to try all kinds of different ideas."³² Mathematical physicist Sir Roger Penrose: "My position [on consciousness] demands a major revolution in physics.... I've come to believe that there is something very fundamental missing from current science.... Our understanding at this time is not adequate and we're going to have to move to new regions of science...."³³ Niels Bohr, one of the patriarchs of quantum physics: "We can admittedly find nothing in physics or chemistry that has even a remote bearing on consciousness.... [Q]uite apart from the laws of physics and chemistry, as laid down in quantum theory, we must also consider laws of quite a different kind."³⁴ Werner Heisenberg, Nobel laureate in physics and Bohr's contemporary, similarly observed: "There can be no doubt that 'consciousness' does not occur in physics and chemistry, and I cannot see how it could possibly result from quantum mechanics."³⁵ Sir John C. Eccles, the Nobel Prize-winning neurophysiologist: "I maintain that the human mystery is incredibly demeaned by scientific reductionism, with its claim to account for all of the spiritual world in terms of patterns of neuronal activity. This belief must be classed as a superstition. We have to recognize that we are spiritual beings with souls existing in a spiritual world as well as material beings with bodies and brains existing in a material world."³⁶ Pioneer neurosurgeon Wilder Penfield: "It will always be quite impossible to explain the mind on the basis of neuronal action within the brain.... Although the content of consciousness depends in large measure on neuronal activity, awareness itself does not.... To me, it seems more and more reasonable to suggest that the mind may be a distinct and different essence."³⁷ Physicist Charles H. Townes, awarded the Nobel Prize for his work with laser devices: "[T]here seems to be no justification for the dogmatic position taken by some that the remarkable phenomenon of individual human personality can be expressed completely in terms of the known laws governing the behavior of atoms and molecules."³⁸ Neurophysiologist William H. Calvin, of the University of Washington: "Consciousness, in any of its varied connotations, certainly isn't located down in the basement of chemistry or the subbasement of physics.... [These]

consciousness physicists use mathematical concepts to dazzle rather than enlighten.... Such theorists usually avoid the word 'spirit' and say something about quantum fields.... All that the consciousness physicists have accomplished is the replacement of one mystery with another."³⁹ Sir John Maddox, the editor for 22 years of the prestigious journal *Nature*: "What consciousness consists of ... is ... a puzzle. Despite the marvelous successes of neuroscience in the past century... we seem as far from understanding cognitive process as we were a century ago."⁴⁰

Die-hard physicalists do not agree with these dismissive comments. Some physicalists tout hypotheses and theories which they claim show decisively that the brain makes consciousness. So it is not quite right to say that physicalism has no theories about the origins of consciousness; we should say, rather, that physicalism has no *successful* theories for such. As astrophysicist David Darling describes this impasse:

[A] growing number of scientists are now busily rummaging around in the brain trying to explain how the trick of consciousness is done. Researchers of the stature of Francis Crick, Daniel Dennett, Gerald Edelman, and Roger Penrose have recently come forward with a range of ingenious theories. All purport to explain, in one way or another, consciousness as an epiphenomenon of physical and chemical processes taking place in the brain — and all fail utterly. They fail not because their models are insufficiently accurate or detailed, but because they are trying to do what is, from the outset, impossible.

The truth is that no account of what goes on at the mechanistic level of the brain can shed any light whatsoever on why consciousness exists. No theory can explain why the brain shouldn't work exactly as it does, yet without giving rise to the feeling we all have of "what it is like to be." And there is, I believe, a very simple reason for this. The brain does not produce consciousness at all, any more than a televisionset creates the programs that appear on its screen. On the contrary, the brain filters and restricts consciousness, just as our senses limit the totality of experience to which we might otherwise have access.^{41, 42}

Cognitive scientist Donald D. Hoffman, mentioned above, offers a similar explanation of the failure of physicalists to explain how matter could give rise to consciousness:

I believe that consciousness and its contents are all that exists. Space-time, matter and fields never were the fundamental denizens of the universe but have always

been, from their beginning, among the humbler contents of consciousness, dependent on it for their very being. ...If this is right, if consciousness is fundamental, then we should not be surprised that, despite centuries of effort by the most brilliant of minds, there is as yet no physicalist theory of consciousness, no theory that explains how mindless matter or energy or fields could be, or cause, conscious experience.⁴³

Despite this failure, the physicalistic view inspires messianic confidence in its adherents, who ardently strive to extend the physicalist caliphate into every nook and cranny of the life sciences. Their zeal can be unbounded. For example, philosopher Dennett is reported as saying that he would commit suicide if paranormal phenomena turn out to be real.⁴⁴

The implication that there might be room in science for a spiritual component is met with derision. Special contempt is reserved for the possibility that humans might survive bodily death, for this would be the death knell for the mind-equals-brain assumption on which the physicalist doctrine rests. Therefore, the extinction of consciousness with brain death must be total. This absolute prohibition demands a scorched-earth policy in which no variety of survival can be permitted. This is particularly obvious when physicalists themselves have near-death experiences suggesting survival following physical death. When they describe these experiences publicly, they have been bullied by their physicalist colleagues into publicly retracting any implication that something might survive the death of the body.^{45, 46, 47, 48, 49}

Many physicalist skeptics consider the idea of survival of bodily death so dangerous that it must be put down at all costs. These efforts can shade into a deliberate cover-up that masquerades as an effort to protect science. Harvard psychologist William James reported that a leading biologist once told him,

Even if such a thing were true, scientists ought to band together to keep it suppressed and concealed. It would undo the uniformity of Nature and all sorts of other things without which scientists cannot carry on their pursuits.^{50, 51}

In defense of their credo, physicalists often maintain that they actually prefer annihilation with physical death to any sort of survival. Longing for immortality is seen as a defect of character or a philosophical sellout in people too weak-willed to face their impending doom. In the face of certain extermination, one should simply man up and go quietly, proudly and bravely into that dark night. There is a hint of this heroic martyrdom in Lord Bertrand Russell's famous comment, "I believe that when I die I shall rot, and nothing of my ego will survive...I should scorn to shiver with terror at the thought of annihilation."⁵²

HUMAN COSTS

Science has gone too far in breaking down man's belief in his spiritual greatness... and has given him the belief that he is merely an insignificant animal that has arisen by chance and necessity in an insignificant planet lost in the great cosmic immensity.... The principal trouble with mankind today is that the intellectual leaders are too arrogant in their self-sufficiency. We must realize the great unknowns in the material makeup and operation of our brains, in the relationship of brain to mind, in our creative imagination, and in the uniqueness of the psyche. When we think of these unknowns as well as the unknown of how we come to be in the first place, we should be much more humble.⁵³

— Sir John Eccles, neuroscientist and Nobel laureate

Physicalism comes with enormous human costs, which, I believe, are vastly underestimated by the physicalist cheerleaders. Total annihilation is an inescapable part of the physicalism package. Carl G. Jung, the Swiss psychiatrist, said, "The decisive question for man is: Is he related to something infinite or not? That is the telling question of his life."⁵⁴ If consciousness is produced by the brain and vanishes with physical death, as physicalists insist, then any meaningful relationship to "something infinite" is a chimera. Novelist George Orwell was among those who decried the impact of this morbid outlook, saying, "The major problem of our time is the decay of belief in personal immortality."⁵⁵ Jung felt so strongly about this issue that he made it a principle in his patients' therapy. "As a doctor," he said, "I make every effort to strengthen the belief in immortality...."⁵⁶

In any case, one's view of immortality depends on one's concept of time. A problem is that there is no agreed-on definition of time in modern physics. As Nobel Prize-winning physicist Richard Feynman acknowledged, "What is time? We physicists work with it every day, but don't ask me what it is. It's just too difficult to think about."⁵⁷ The philosopher Ludwig Wittgenstein saw the relevance of the "time question" to immortality, saying, "If we take eternity to mean not infinite temporal duration but timelessness, then eternal life belongs to those who live in the present."⁵⁸ Because of the unsettled definition of time in modern physics, physicalists might at least acknowledge that, while immortality is not affirmed in modern physics, neither is the possibility of such excluded.

The belief in immortality has helped sustain human hope for perhaps the entire span of human history. The human cost of a failure of this belief is not admitted within physicalism. The public stance of many physicalists, as mentioned, is to keep a stiff upper lip, flex one's intellectual muscle, and deny any desire or need for such a belief. Yet the old channels within the psyche run deep, and merely declaring immortality undesirable or unnecessary does not make it so.

The fear of death is humanity's Great Disease, the terror that has probably caused more suffering throughout history than all the physical diseases combined. As Ernest Becker said in his Pulitzer Prize-winning book *The Denial of Death*, "[T]he idea

of death, the fear of it, haunts the human animal like nothing else; it is the mainspring of human activity—activity designed largely to avoid the fatality of death, to overcome it by denying in some way that it is the final destiny for man.”⁵⁹

The physicalists’ certainty — that these issues are settled and the verdict is in, that materialism reigns, and spirituality and any form of survival are self-delusions, is regarded as overheated swagger by many consciousness researchers. Kelly, for example, speaking for his colleagues, states,

We believe it takes astonishing hubris to dismiss en masse the collective experience of a large proportion of our forebears, including persons widely recognized as pillars of all human civilization, and we are united in believing that the single most important task confronting all of modernity is that of *meaningful* reconciliation of science and religion....[W]e believe that emerging developments within science itself are leading inexorably in the direction of an expanded scientific understanding of nature, one that can accommodate realities of a ‘spiritual’ sort ...⁶⁰

PRACTICALITY

But not *just* of a spiritual sort. For instance, quantum theorist Henry P. Stapp, widely considered the current dean of quantum theorists, has expressed concern about the impact of the physicalistic views on the nitty-gritty, practical ways in which we free-range humans live our lives. In his paper titled “Attention, Intention, and Will in Quantum Physics,” he stated, “It has become now widely appreciated that assimilation by the general public of this ‘scientific’ view, according to which each human is basically a mechanical robot, is likely to have a significant and corrosive impact on the moral fabric of society.” He warned of the “growing tendency of people to exonerate themselves by arguing that it is not ‘I’ who is at fault, but some mechanical process within: ‘my genes made me do it’; or ‘my high blood-sugar content made me do it.’”^{61,62} (The acclaimed science writer Margaret Wertheim has called this the “Genes-R-Us” view.⁶³) Stapp shows how hard-core physicalism lets us off the hook by assuming that the world unfolds on its own according to the alleged meaningless laws of nature. We are not active participants in such a process, but are passive observers at best and victims at worst.

Cosmologist and quantum physicist Menas C. Kafatos, of Chapman University, is the co-author of *The Conscious Universe: Parts and Wholes in Physical Reality*.⁶⁴ Like Stapp, he is concerned with the practical importance of consciousness in daily life, what our future will look like, and whether we shall have a future that can support life as we know it. He writes:

Are these issues yet another set of intellectual arguments that scientists, philosophers and academics make? They are very relevant to your life and your healthy living: We seem to be bound by our minds, often giving us no peace.

Yet, if what we view as reality is really the product of the mind, then we can approach our mind as a tool, as a friendly tool, get it on “our side,” so to speak ... [for] healthy living ... what we should pass on to the next generations.⁶⁵

YOUR SPOUSE AS A DIFFERENTIAL EQUATION

Stapp’s concern that physicalistic science defines us as mechanical robots is a grave issue. If we peel back the layers of physicalistic logic behind the robotic view, what do we find? We come face-to-face with serious illogic, described by philosopher of science Sir Karl Popper in his Compton Lecture in 1965.⁶⁶ Popper observed that, according to physicalistic determinism, mental states are the result of

... a certain physical structure of the holder — perhaps of his brain. Accordingly, we are deceiving ourselves whenever we believe that there are such things as *arguments* or *reasons* which make us accept determinism. Purely physical conditions including our physical environment make us say or accept whatever we say or accept.⁶⁷

Popper called the physicalistic narrative “promissory materialism” — the notion that one day, not so very long from now, we’ll be able to give a completely physical account of consciousness. Popper predicted that, lured by periodic advances in brain science, “[W]e shall be talking less and less about experiences, perceptions, thoughts, beliefs, purposes and aims; and more and more about brain processes....”⁶⁸ His prediction has come to pass.

Nobel laureate and neurophysiologist Sir John Eccles, already mentioned, agreed with Popper. He excoriated the physicalist narrative, saying:

[P]romissory materialism [is] a superstition without a rational foundation. The more we discover about the brain, the more clearly do we distinguish between the brain events and the mental phenomena, and the more wonderful do both the brain events and the mental phenomena become. Promissory materialism is simply a religious belief held by dogmatic materialists...who confuse their religion with their science. It has all the features of a messianic prophecy....⁶⁹

Because physicalists maintain that no one is immune from physical laws, the implication is that everyone is a mechanical robot, including, inevitably, physicalists themselves. As Eccles observed, this leads to “an effective *reductio ad absurdum*.”⁷⁰ Why absurd? Consider philosopher Dennett’s above observation that free will is an illusion. In asserting such, he presumably believes he was using his own free will to arrive at the conclusion that free will does not exist. But physicalists never

acknowledge this pretzel-like contradiction in their “logic.” Determined, robotic behavior is for others. The robotic strictures of physicalism do not apply to themselves. Thus they behave as if *their* conclusions are freely arrived at and should be taken seriously. They *must* exempt themselves from their physicalistic theory, for if they did not they would have no claim to truth, no compelling “arguments or reasons,” as Popper noted. They cannot acknowledge that, if physicalism is valid, they arrived at their conclusions *not* as a result of freely considered data, but because their atoms, molecules and brain made them do so. They are thus hoisted by their own petard.

This ludicrous situation was parodied by astrophysicist Sir Arthur Eddington in his 1927 Gifford Lecture:

The materialist who is convinced that all phenomena arise from electrons and quanta and the like controlled by mathematical formulae, must presumably hold the belief that his wife is a rather elaborate differential equation, but he is probably tactful enough not to obtrude this opinion into domestic life.⁷¹

Futurist Willis Harman identified the hypocrisy of the physicalist position:

Science for three and a half centuries has been built on the premise that consciousness as a causal factor does not have to be included.... [But] nobody has ever lived life on the basis of such a contrary premise. Nobody has ever said, “I’m going to live my life as though my consciousness — my mind — weren’t capable of making decisions, making choices, taking action....”⁷²

In the same vein, philosopher Alfred North Whitehead stated, “Scientists, animated by the purpose of proving they are purposeless, constitute an interesting subject for study.”⁷³ Sir John Eccles concurred: “ In the protected duchies of academic philosophy and psychology ...professional philosophers and psychologists think up the notion that there are no thoughts, come to believe that there are no beliefs, and feel strongly that there are no feelings.” He further observed that if future generations ever erect a Hall of Human Silliness, the idea of biological determinism, the idea that we are totally controlled by our atoms, DNA, and genes, will occupy a position of high honor.⁷⁴

EVIDENCE

The evidence favoring a view of consciousness that transcends physicalism is enormous and is too vast to be described here. Several excellent summaries have recently appeared, such as *Varieties of Anomalous Experience: Examining the Scientific Evidence*⁷⁵; *Irreducible Mind: Toward a Psychology for the 21st Century*⁷⁶;

and, as mentioned, *Beyond Physicalism: Toward Reconciliation of Science and Spirituality*.⁷⁷

All told, the evidence from more than a century of consciousness research shows that consciousness can do things brains cannot do. Thousands of studies show that humans can psychically *insert* information *into* the environment nonlocally, and also psychically *acquire* information *from* the environment nonlocally.

What does “nonlocal” imply? If you have ever shared thoughts or physical sensations with someone at a distance, or knew or dreamed about something before it happened, or experienced something that could not be explained by the use of your physical senses, you *may* have had a taste of what “nonlocal” means, or at least a glimpse of what nonlocal events *can* look like. I say “may” because we can deceive ourselves, so we must be careful in how we interpret any experience in life.

Nonlocality is a concept that physicists apply to a class of events whose description relates to the speed of light.⁷⁸ As physicist Nick Herbert explains, “A non-local connection links up one location with another without crossing space, without decay, and without delay.” These connections have three identifying characteristics, says Herbert. They are *unmediated* (no connecting signal is involved), *unmitigated* (the strength of the correlations do not fade with increasing distance), and *immediate* (they are instantaneous).⁷⁹

Nonlocality is subdivided by many physicists into three types. Type I is spatial nonlocality; type II is temporal nonlocality; and type III nonlocality is both spatial and temporal.⁸⁰

But physics does not own nonlocality, and physicists do not have a monopoly on nonlocal events and the language that describes them. People were routinely having nonlocal experiences millennia before quantum physics was invented in the twentieth century, and we are not obligated to cede nonlocality to scientists who have chosen to nuance the term differently.

There are compelling scientific, historic, and experiential reasons for believing that consciousness behaves nonlocally in space and time—that it is spatially unconfined to brains and bodies, and that it is temporally unconfined to the present. The evidence suggests that space and time are simply not applicable to certain operations of consciousness.^{81,82, 83} This evidence overwhelmingly suggests that consciousness is both trans-spatial and trans-temporal, that it is *not in* space and time.^{84, 85}

Empirical evidence shows that brains are separate, but minds are not. In the domain of mind and consciousness, separation is not fundamental. The degree of spatial separation of individual minds, the distance that is involved, is not important; and the connections are instantaneous or immediate, whether the humans involved are an inch apart, on opposite sides of the planet, or presumably if they are at opposite ends of the universe.

Many individuals accept the evidence that minds might operate at a distance, but they rebel at the possibility that minds might function outside the present. Yet scores of experiments indicate that human consciousness can operate nonlocally not only in space but also in time. Temporal nonlocality of consciousness has been solidly demonstrated. In these studies, intentions appear to influence certain types of events in the past, even though they are presumed already to have

happened.^{86, 87}In addition, individuals also appear capable of acquiring accurate information from the future before it has occurred, especially if this information is of an unpleasant or traumatic nature.^{88,89, 90, 91, 92}

Thenonlocal picture of consciousness that has emerged from these studies, in which separation of minds is not fundamental in space or time, has enormous implications. A consciousness that is nonlocal with respect to space is *infinite* and *omnipresent*. A consciousness that is nonlocal with respect to time is *eternal* and *immortal*. And if individual consciousnesses are boundless and boundaryless, at some level they must come together to form a whole — a Universal or One Mind. *When we therefore describe consciousness as eternal, infinite, and one, we are not speaking symbolically or poetically. We are invoking empirical science, in addition to human experience.*

THE SQUARE ROOT OF A SONNET

[We] must boldly take an anti-mechanistic and pluralistic stand on the nature of science. It is almost comically arrogant to think that Nature should conform to our favorite modes of investigation, or that we should dictate to Nature the forms in which we are willing to accept its secrets.⁹³

— Stephen E. Braude

Physicalists object, claiming that these nonlocal, consciousness-related phenomena cannot possibly be true. If they were valid, they would violate the so-called iron-clad laws of nature that prohibit them, which is unthinkable. Astrophysicist Sir Arthur Eddington forcefully rejected this line of reasoning in his 1929 Swarthmore Lecture, already mentioned. “Materialism in its literal sense is long sense dead,” he said. Noting that the material stuff of the world has been replaced by mathematical symbols and equations, he cautioned that, “You cannot apply such a scheme to the parts of your personality which are not measurable by symbols any more than you can extract the square root of a sonnet.” Natural law, he insisted, is therefore not applicable to the “unseen world” of consciousness.⁹⁴ What is being violated by the events in question is not the laws of nature, but the stubborn prejudices of the physicalists.

Physics has evolved considerably since Eddington’s observations in 1929. Are his opinions relevant today? I suggest they are even more relevant. Many outstanding scientists in recent years have stipulated that nonlocal, consciousness-related events are fully compatible with emerging concepts within contemporary physics. For example, the eminent physicist O. Costa de Beauregard observed, “Today’s physics allows for the existence of ‘paranormal’ phenomena of telepathy, precognition, and psychokinesis....The whole concept of ‘nonlocality’ in contemporary physics requires this possibility.”⁹⁵ Far from being ‘irrational,’ *the paranormal is postulated by today’s physics*” [emphasis in original].⁹⁶ George Wald, a Nobel laureate in biology, stated, “Mind, rather than emerging as a late outgrowth in the evolution of life, has existed always...the source and condition of physical reality.”⁹⁷ And,

“I do not need spiritual enlightenment to know that I am one with the universe. That is just good physics.”⁹⁸ Henry P. Stapp, the eminent quantum theorist already mentioned, has stated, “The new physics presents prima facie evidence that our human thoughts are linked to nature by nonlocal connections: what a person chooses to do in one region seems immediately to affect what is true elsewhere in the universe....[O]ur thoughts... DO something” [emphasis in original].⁹⁹ Gerald Feinberg, the respected Columbia University physicist, concurred, saying, “If such phenomena [so-called paranormal events] indeed occur, no change in the fundamental equations of physics would be needed to describe them.”¹⁰⁰ Henry Margenau, the esteemed Yale University physicist and member of Princeton University’s Institute for Advanced Study, agreed. Speaking of so-called paranormal events, he said, “Strangely, it does not seem possible to find the scientific laws or principles violated by the existence of [these phenomena]. We can find contradictions between [their occurrence] and our culturally accepted view of reality—but not—as many of us have believed—between [their occurrence] and the scientific laws that have been so laboriously developed.”¹⁰¹

One of the great breakthroughs in physics in recent years is the discovery that nonlocal connections and entanglement — nonlocality’s sibling — are now known to occur in the macroscopic, biological, human domain, as well as in the invisible subatomic domain. For materialists who have long denied this possibility, this is a shocking development. As physicist Vlatko Vedral emphasized in a groundbreaking article in *Scientific American* in 2011:

Quantum mechanics is commonly said to be a theory of microscopic things: molecules, atoms, subatomic particles.... [T]his convenient partitioning of the world is a myth.... It is but a useful approximation of a world that is quantum at all scales.... Over the past several years experimentalists have seen quantum effects in a growing number of macroscopic systems. *The quintessential quantum effect, entanglement, can occur in large systems as well as warm ones — including living organisms....* Until the past decade, experimentalists had not confirmed that quantum behavior persists on a macroscopic scale. Today, however, they routinely do. These effects are more pervasive than anyone ever suspected. They may operate in the cells of our body.... We can’t simply write [quantum effects] off as mere details that matter only on the very smallest scales.... The entanglements are primary [emphasis added].¹⁰²

These developments have neutered the insistence of materialistic skeptics that nonlocal or entangled phenomena simply cannot happen in the human, macroscopic domain.

Rather than being weird and contrary to nature as physicalists insist, distant, nonlocal, entangled connections among and between living creatures might be

expected to develop, because they would convey a survival advantage to the individual possessing them. As physicist Johann Summhammer, of the Vienna University of Technology, has stated,

Entanglement would lead to a Darwinian advantage: Entanglement could coordinate biochemical reactions in different parts of a cell, or in different parts of an organ. It could allow correlated firings of distant neurons. And...it could coordinate the behaviors of members of a species, because it is independent of distance and requires no physical link. It is also conceivable that entanglement correlates processes between members of different species, and even between living systems and the inanimate world.¹⁰³

Human-level, nonlocal, entangled connections appear to demonstrate the three essential characteristics of nonlocal subatomic events mentioned above: they appear to be unmediated, unmitigated, and immediate. This does not mean, however, that subatomic nonlocality necessarily explains or underlies the nonlocality of mind or consciousness, despite the widespread enthusiasm to assign a “quantum” explanation to the nonlocal experiences of humans. Caution is required. There is no conclusive evidence that quantum nonlocality *causes* nonlocal human experiences. Indeed, we may be dealing only with correspondences in terminology. Or not. Further investigation will tell.

Many individuals may be surprised to discover the depth of this empirical evidence. There are at least six areas in consciousness research in which, analyses show, resoundingly demonstrate the nonlocal, beyond-the-brain actions of consciousness. Experiments in these areas have been replicated repeatedly in labs around the world, each area giving odds against chance of around a billion to one, or combined odds against chance of 10^{54} to one, a truly astronomical number. These areas of research, too extensive to be reviewed here, are remote viewing, random number generator influence, Ganzfeld, the Global Consciousness Project, presentiment, and precognition.^{104,105, 106, 107}

This evidence is not a cosmetic re-working of current materialistic views, but is a radical departure or paradigm shift in current thinking. Consciousness researcher Kelly summarizes what is at stake:

[This emerging world picture] is not just the same old physicalistic world with an altered expression, but a world whose constitution is fundamentally different in ways that matter to us human beings. [This] vision ... provides an antidote to the prevailing postmodern disenchantment of the world and demeaning of human possibilities. It not only more accurately and fully describes our human condition but engenders hope and encourages human flourishing. It provides reasons for us to believe that

freedom is real, that our human choices matter, and that we have barely scratched the surface of our human potentials. It also addresses the urgent need for a greater sense of worldwide community and interdependence, a sustainable *ethos*, by demonstrating that under the surface we and the world are much more extensively interconnected than previously realized. We strongly suspect that our individual and collective fates in these exceptionally dangerous and difficult times — indeed, the fate of our precious planet and *all* of its passengers — may ultimately hinge upon wider recognition and more effective utilization of the higher states of being that are potentially available to us but largely ignored or even actively suppressed by our post-modern civilization with its strange combination of self-aggrandizing individualism and fundamentalist tribalisms (emphasis in original).¹⁰⁸

THEORY

One of the main obstacles to the penetration of this evidence into mainstream science is the lack of a generally accepted theory as to how these nonlocal, so-called paranormal, phenomena *could* be true. But if this is a weakness for consciousness research, it is equally problematic for mind-equals-brain physicalism, which is completely bereft of any successful explanatory theory of consciousness, as mentioned.

The basic conundrum is not how a particular so-called paranormal event — telepathy, clairvoyance, precognition, psychokinesis, or the survival of bodily death — could be valid, but how we can consciously be aware of *ordinary* experiences. In other words, the primary mystery is the very existence of consciousness. We breezily ignore the role of consciousness in the mundane events of our lives — how we decide what to have for dinner, say, and how we choose to raise a fork of spaghetti while opening our mouth at the same time and swallowing soon thereafter, and how we can experience the redness of the sauce, the taste of the garlic, the satisfaction of a lovely presentation, the bouquet of the wine, and admiration for the chef — feats beyond the ability of the most sophisticated robot. Although physicalists offer a flurry of explanations in sensorimotor terms for how these accomplishments happen, their explanations are empty of the crucial role of consciousness in all such sequences.

Any experience in which consciousness is involved is mysterious, whether deciphering the Lorenz equation or deciding to pick our nose. Commonplace events are as enigmatic as any of the so-called paranormal pyrotechnics that provoke incredulity and mouth-foaming objections from physicalists. There are not two categories of consciousness-related phenomena, normal and paranormal. They are *all* “para” — or normal, as the case may be. If we were sufficiently awake, we might realize that the lifting of a finger or the experience of love is as astonishing as the survival of bodily death. When physicalists bridle at the extraordinary and ignore the

commonplace, in biblical imagery they are “straining at a gnat and swallowing a camel.”¹⁰⁹

Voltaire— no friend of spirituality — realized this. He observed, “It is not more surprising to be born twice than once.”¹¹⁰ He understood that the marvel is life and consciousness themselves, not how many turns they make on the wheel of life.

DOUBLE DAZZLEMENT

“To live is so startling it leaves little time for anything else,” exulted Emily Dickinson.¹¹¹ And physician-researcher-essayist Lewis Thomas observed, “Statistically, the probability of any one of us being here is so small that you’d think the mere fact of existing would keep us in a contented dazzlement of surprise.”¹¹² Add to this the fact that we are not only here but conscious as well, and you’d think we might experience a state of double dazzlement. But no; for most people, most of the time, consciousness is so ordinary and boring it largely escapes notice: the height of cosmic ingratitude.

Awakening us to conscious awareness of the ordinary is the calling of every great poet and artist. This is the point of Tennyson’s humble “Flower in the Crannied Wall,” of which he said: “... *if I could understand/What you are, root and all, and all in all,/I should know what God and man is.*”¹¹³ And as George Eliot wrote in *Middlemarch*, “If we had a keen vision of all that is ordinary in human life, it would be like hearing the grass grow or the squirrel’s heart beat, and we should die of that roar which is the other side of silence.” But Eliot felt compelled to add, “As it is, the quickest of us walk about well wadded with stupidity....We do not expect people to be deeply moved by what is not unusual.”¹¹⁴

If our well-waddedness prevents our recognition of the extraordinariness of the ordinary, how do we strip away the cognitive padding that insulates us from greater awareness? This is a crucial question because, typically, dedicated, well-wadded physicalists scrupulously avoid evidence that contradicts their assumptions. As one such individual commented, “This is the sort of thing I would not believe, even if it really happened.”¹¹⁵ Many consciousness researchers and philosopher-theorists such as Ken Wilber, a towering giant in this field, have written extensively about how to openly approach and experience the evidence for a nonphysicalist view.¹¹⁶ In fact, the overall thrust of all three volumes mentioned above, and hundreds more that could be mentioned, is to nudge us into fuller awareness through an enlarged conceptual framework, as well as through experiences such as contemplative practices, a meditative walk in the woods, or paying attention to a baby’s laugh, that point beyond a physicalistic approach. *But what must be continually emphasized is that the evidence for a nonmaterial, nonphysical view of consciousness is also solidly empirical, and not just subjective and experiential: experience and experiment.*

The incompleteness of contemporary science regarding consciousness is particularly obvious in the blank spots that have arisen on our current maps of the universe. It’s almost as if current cosmologists have stumbled onto the equivalent of the warning “Here be dragons” of the medieval cartographers. As consciousness researchers Edward Kelly and David E. Presti state:

[D]espite all of our genuine scientific knowledge and technical expertise, patiently accumulated over centuries of systematic and disciplined effort, we ... apparently overlooked until the past decade or so something like 95% of the *physical* content of the universe — its so-called dark matter and energy. This chastening discovery should certainly encourage humility, and perhaps a sense of excitement as well, regarding what may remain to be discovered about the human mind!¹¹⁷

Because physicalists assume that extraordinary, anomalous, consciousness-related phenomena cannot exist in principle, they generally refuse to examine the overall evidence for these happenings. In so doing, they may have duplicated the failure of astrophysicists and cosmologists to notice 95 percent of the matter and energy in the universe, only this time the overlooked item is the fundamental nature of consciousness and its nonlocal manifestations.

Suppose I said to you, “I would like to be your internal medicine physician, but you should know that I understand nothing about 95 percent of the organs in your body.” You would probably be disgusted by my audacity and turn away, as you should. Should we not react with equal caution to physicalists who want to be our interpreters of reality, when they are in the dark regarding 95 percent of the physical content of the universe? With such massive lacunae regarding *physical* issues, why trust them where *consciousness* is concerned?

Why do entities such as consciousness remain invisible to physicalists? As astrophysicist David Darling says, “If science searches the universe — as it does — for certain kinds of truth, then these are inevitably the only ones it will find. Everything else will slip through the net.”¹¹⁸ The net used by consciousness researchers is made of finer mesh than the net employed by physicalists; it captures facts and phenomena physicalists never notice.

There is no room for smugness, however, because this shortcoming — the failure to notice — affects everyone in one way or another, as novelist Stephen King humorously points out:

[J]umbo shrimp, everybody’s oxymoron. They’re the big shrimp that nobody ate in restaurants until 1955 or 1960 because, until then, nobody thought of going shrimping after dark. They were there all the time, living their prosaic shrimp lives, but nobody caught them. So when they finally caught them it was, “Hello! Look at this. This is something entirely new.” And if the shrimp could talk they’d say, “[W]e’re not new. We’ve been around for a couple of thousand years. You were just too dumb to look for us.”¹¹⁹

Noticing: how simple! Yet, there is a folk saying: “If you want to hide the treasure, put it in plain sight.” Then nobody will find it. This is nowhere truer than

with consciousness, our quarry. How could something as ordinary as consciousness be a treasure? Our insensitivity is why the great disciplines of awareness strive to yank us out of our slumber and return us to the simple act of noticing. This is why Lawrence LeShan, the great psychologist and consciousness researcher, defines meditation as the art of “doing one thing well.” The “one thing’ is undiluted attention, awareness, noticing — including the fact that we are, against all odds, mysteriously, gloriously, wondrously, *conscious*.¹²⁰

MIND AT LARGE

The individual mind is immanent but not only in the body. It is immanent also in pathways and messages outside the body; and there is a larger Mind of which the individual mind is only a sub-system. This larger Mind is comparable to God and is perhaps what some people mean by “God,” but it is still immanent in the total interconnected social system and planetary ecology.¹²¹

— Gregory Bateson, *Steps to an Ecology of Mind*

A recurring theme of modern consciousness research is that there is a larger, more extensive consciousness beyond our individual mind, which unites all individuals in a shared existence. This view can be traced back for at least three millennia, appearing in various forms in Eastern traditions. But this concept is also threaded through Western philosophies.

The key idea is an infinitely extended intelligence that unites all individuals in a shared existence. As Hippocrates stated, “There is one common flow, one common breathing, all things are in sympathy.”¹²² Pico della Mirandola, the Renaissance philosopher, believed that the world is governed by a “unity whereby one creature is united with the others and all parts of the world constitute one world.”¹²³ In the 19th century, the German philosopher G. W. F. Hegel called distant mental exchanges between humans “the magic tie.” He believed that “the intuitive spirit oversteps the confines of time and space; it beholds things remote; things long past, and things to come.”¹²⁴ Arthur Schopenhauer, also in 19th-century Germany, suggested that a single event could figure in two or more different chains of circumstance, linking the fates of different individuals in profound ways. He believed in a form of communication that took place between humans during dreams.¹²⁵ A particularly eloquent proponent of this collective, trans-individual view of consciousness was the British classicist and psychical researcher F. W. H. Myers (1843-1901), who wrote:

There exists a more comprehensive consciousness, a profounder faculty, which for the most part remains potential only...but from which the consciousness and the faculty of earth-life are mere selections....[N]o Self of which we can here have cognizance is in reality more than a fragment of a larger Self — revealed in a fashion at

once shifting and limited through an organism not so framed as to afford it full manifestation.¹²⁶

It is little known that many prominent architects of 20th-century science have also affirmed a unified, collective aspect of consciousness, in which all individual minds are connected as a single whole. As Nobel Prize-winning physicist Erwin Schrödinger put it, “To divide or multiply consciousness is something meaningless. In all the world, there is no kind of framework within which we can find consciousness in the plural; this is simply something we construct because of the spatio-temporal plurality of individuals, but it is a false construction.... The category of *number*, of *whole* and of *parts* are then simply not applicable to it.”¹²⁷ And, “The overall number of minds is just one....In truth there is only one mind.”¹²⁸ Astrophysicist Sir Arthur Eddington agreed: “The idea of a universal Mind or Logos would be, I think, a fairly plausible inference from the present state of scientific theory; at least it is in harmony with it.”¹²⁹ And as the eminent physicist David Bohm observed, “Deep down the consciousness of mankind is one. This is a virtual certainty... and if we don’t see this it’s because we are blinding ourselves to it.”¹³⁰ Bohm and his colleague Basil Hiley further stated, “The notion of a separate organism is clearly an abstraction, as is also its boundary. Underlying all this is unbroken wholeness even though our civilization has developed in such a way as to strongly emphasize the separation into parts.”¹³¹

These images are congruent with psychiatrist Carl G. Jung’s concept of the collective unconscious, Emerson’s Over-Soul, and Aldous Huxley’s Mind at Large—a Universal or One Mind, a plenum that fuels our experience as individual sentient, conscious creatures. As philosopher Michael Grosso has stated, “Our individual minds are surface growths that appear separate and distinct but whose roots lie in a deeper psychic underground; there we are mutually entangled and part of a more extended mental system.”¹³²

A perennial complaint toward this view is the horror of being swallowed up and homogenized in a cosmic blob of undifferentiated consciousness, in which individuality disappears. This concern is emphatically rejected by those who claim to have experienced the larger connections. William James emphasized that a sense of individuality is preserved, not extinguished, in the Universal or One Mind:

We with our lives are like islands in the sea, or like trees in the forest. The maple and the pine may whisper to each other with their leaves... [but] the trees also commingle their roots in the darkness underground, and the islands also hang together through the ocean’s bottom. Just so there is a continuum of cosmic consciousness, against which our individuality builds but accidental fences, and into which our several minds plunge as into a mother-sea or reservoir. Our “normal” consciousness is circumscribed for adaptation to our external earthly environment, but the fence is weak in

spots, and fitful influences from beyond leak in, showing the otherwise unverifiable common connection.¹³³

THE BRAIN AS FILTER

The brain does not generate thought...any more than the wire generates electric current.¹³⁴

— Paul Brunton

An assertion related to mind-at-large is that the brain operates not as a generator or producer of mind or consciousness, but as a *filter* that receives, limits, transforms, and transmits information that arises external to the brain. As historian of religion Huston Smith has said, “The brain breathes mind like the lungs breathe air.”¹³⁵ This reducing function is vital; otherwise we would likely be overwhelmed by informational input, which would compromise our ability to get on successfully in the world. An impressive array of historical, philosophical and scientific opinion has accumulated in favor of the brain-as-filter view, including philosophers Aldous Huxley, F. W. H. Myers, William James, Henri Bergson, F. C. S. Schiller, C. D. Broad, and others.

We pay a price for this stepped-down version of consciousness, however. An experience of our essential nature is obscured. As novelist Huxley put it, “[E]ach one of us is potentially Mind at Large. But in so far as we are animals, our business at all costs is to survive. To make biological survival possible, Mind at Large has to be funneled through the reducing valve of the brain and nervous system. What comes out at the other end is a measly trickle of the kind of consciousness which will help us to stay alive on the surface of this particular planet”¹³⁶ As astrophysicist Darling has said, we are conscious not because of the brain, but in spite of it.¹³⁷

Philosopher Michael Grosso has summarized the key features of this view:

The brain *transmits* — it does not *produce* — consciousness.... [M]ind is not a property of the brain but a user of the brain.... Consciousness preexists the brain; it does not emerge from the brain. There is a *transpersonal* mind, i.e., a mind at large, a cosmic consciousness, James’s “mother-sea” of consciousness.... [There is an] ever-fluctuating threshold that separates subliminal from supraliminal mental life.”¹³⁸

...A crude analysis with radio and radio waves: the radio does not produce the radio waves; it detects, transmits, and filters them. If your radio breaks down, it doesn’t follow that the sounds you’re listening to have ceased to exist. They just cease to be detectable. An analogy is possible between this and the mind-brain relationship.”¹³⁹

The permeability of our mental filter is not fixed. Filters can become clogged, but they can also become more porous, so that the “measly trickle” that emerges is increased. As a consequence of this “ever-fluctuating threshold,” experiences such as telepathy, clairvoyance, precognition, and extraordinary knowing may occur. Throughout human history, techniques have been developed to alter this threshold in favor of expanded awareness, as in various mystical, religious, spiritual, and native traditions.

CREATIVITY

The real trailblazers ... will be those who break from the rigid and fruitless tradition of looking for analyses of [human] capacities in terms of lower-level processes and mechanisms... [We] must repudiate the idea that only the methods of physics yield genuine understanding...¹⁴⁰

— Stephen E. Braude

The “cash value” of the beyond-the-brain models of mind-matter interaction can be seen in the domain of creativity. Physicalistic models of brain function fail to explain, for example, the mind-boggling feats of savants, who are commonly mentally impaired, or the genius of prodigies such as the great mathematician Srinivasa Ramanujan.¹⁴¹ But if all individual minds are connected with one another and to a plenum of consciousness that transcends ordinary awareness, and if the threshold between expanded and contracted awareness is continually shifting, individuals might have occasional access to all conceivable knowledge, past, present, and future. This could account for what F. W. H. Myers called a “subliminal uprush” of genius-level creativity and understanding.¹⁴²

These “uprushes” can be spectacular when they occur in children. Developmental psychologist Joseph Chilton Pearce reports a striking example. When he was in his early thirties, teaching humanities in a college, he was engrossed in theology and the psychology of Carl Jung. Pearce describes himself as “obsessed” by the nature of the God-human relationship, and his reading on the subject was extensive. One morning as he was preparing for an early class, his five-year-old son came into his room, sat down on the edge of the bed, and launched into a twenty-minute discourse on the nature of God and man. Pearce was astonished. He states:

He spoke in perfect, publishable sentences, without pause or haste, and in a flat monotone. He used complex theological terminology and told me, it seemed, everything there was to know. As I listened, astonished, the hair rose on my neck; I felt goose bumps, and, finally, tears streamed down my face. I was in the midst of the uncanny, the inexplicable. My son’s ride to kindergarten arrived, horn blowing, and

he got up and left. I was unnerved and arrived late to my class. What I had heard was awesome, but too vast and far beyond any concept I had had to that point. The gap was so great I could remember almost no details and little of the broad panorama he had presented....He wasn't picking up his materials from me. I hadn't acquired anything like what he described and would, in fact, be in my mid-fifties and involved in meditation before I did....My son had no recollection of the event.¹⁴³

Many consciousness researchers recognize that there are deeper ways of knowing than the rational, logical, analytical methods usually attributed to "doing science." These deeper ways do not deny the physical senses and reason, but they include and transcend them. We get glimpses of this process from exemplars who have employed them. An example is Thomas Edison, America's great inventor, who stated:

People say I have created things. I have never created anything. I get impressions from the Universe at large and work them out, but I am only a plate on a record or a receiving apparatus — what you will. Thoughts are really impressions that we get from outside.¹⁴⁴

Logic, reason, and intellectual analysis take a back seat in this unfolding. As Eugene Wigner, Nobel laureate in physics, put it, "The discovery of the laws of nature requires first and foremost intuition, conceiving of a picture and a great many subconscious processes. The...confirmation of these laws is another matter.... [L]ogic comes after intuition."¹⁴⁵ Baron Carl Friedrich von Weizsäcker, the renowned physicist who was a student of the legendary physicist Werner Heisenberg, thought similarly about creativity and discovery in science:

A great scientific discovery ... is often described as an inspiration or a special gift of grace which comes to the researcher when and as it pleases, like the answer from "another authority" and then almost without effort on his part. It is never viewed as the inevitable result of his research effort. Here we find the often disturbing and happy experience: "It is not I; I have not done this." Still, in a certain way it is I — yet not the ego ... but ... a more comprehensive self.¹⁴⁶

Psychiatrist Carl G. Jung conceived of a timeless reservoir of information not unlike Edison's image of "impressions from the Universe at large":

As a matter of fact we have actually known everything all along; for all these things are always there, only we are not there for them. The possibility of the deepest insight existed at all times, but we were always too far away from it.... Originally we were all born out of a world of wholeness and in the first years of life are still completely contained in it. There we have all knowledge without knowing it. Later we lose it, and call it progress when we remember it again.¹⁴⁷

The unfolding of this knowledge is revelatory. It cannot be manipulated. As Aldous Huxley said,

Understanding is not inherited, nor can it be laboriously acquired. It is something which, when circumstances are favorable, comes to us, so to say, of its own accord. All of us are knowers, all the time; it is only occasionally and in spite of ourselves that we directly understand the mystery of given reality.¹⁴⁸

Still, we are not helpless. Although the knowledge cannot be commanded, it can be invited. We can set the stage for the revelation. This seeming paradox has been emphasized repeatedly in the world's great spiritual traditions. As historian of religions Huston Smith, mentioned above, says, from the Christian tradition, "Everything is a gift, but nothing is free."¹⁴⁹ Vivekananda, from the Hindu perspective, agreed: "The wind of God's grace is always blowing, but you must raise your sail."¹⁵⁰ The message from Islam is the same. As the Sufi mystic Bastami said, "The knowledge of God cannot be attained by seeking, but only those who seek it find it."¹⁵¹

RESISTANCE

It may seem disrespectful to suggest that prejudice, intolerance, and bias influence attitudes of scientists toward the nature of consciousness and the way the mind works, because scientists are supposed to weigh facts coolly and objectively. But every scientist knows there is a shadow side to the profession, in which narrow-mindedness has always existed. As Einstein remarked, "It is harder to crack a prejudice than an atom."¹⁵²

Open minds toward the evidence we have examined can be hard to come by. Closed minds, of course, are nothing new — not just toward consciousness-related phenomena, but toward new developments in the physical sciences as well.¹⁵³ During the early twentieth century, plate tectonics and continental drift were hotly debated in the field of geophysics. Looking back on this debate, the eminent geophysicist Sir Edward Bullard observed, in words that apply to the current arguments about consciousness-related phenomena,

There is always a strong inclination for a body of professionals to oppose an unorthodox view. Such a

group has a considerable investment in orthodoxy: they have learned to interpret a large body of data in terms of the old view, and they have prepared lectures and perhaps written books with the old background. To think the whole subject through again when one is no longer young is not easy and involves admitting a partially misspent youth. . . . Clearly it is more prudent to keep quiet, to be a moderate defender of orthodoxy, or to maintain that all is doubtful, sit on the fence, and wait in statesmanlike ambiguity for more data....¹⁵⁴

Max Planck, the founder of quantum mechanics, confronted this problem. He famously said, "A new scientific truth does not triumph by convincing its opponents and making them see the light, but rather because its opponents eventually die, and a new generation grows up that is familiar with it."¹⁵⁵ Or as Planck's view is often paraphrased, "Science changes funeral by funeral."

Planck's observation is especially applicable to medicine, my field. I have many excellent colleagues who recoil from any view that contradicts physicalism. This is not surprising. We physicians are continually assured, from pre-med days forward, that physicalism is valid. For instance, in a cameo of the materialistic outlook, the outstanding neuroscientist Antonio Damasio, of the University of Southern California, confidently predicted in 1999, the final year of "The Decade of the Brain," as designated by US President George H. W. Bush:

In an effort that continues to gain momentum, virtually all the functions studied in traditional psychology — perception, learning, and memory — are being understood in terms of their brain underpinnings. The mystery behind many of these functions are being solved, one by one, and it is now apparent that even consciousness, the towering problem in the field, is likely to be elucidated before too long.¹⁵⁶

And as philosopher Stan V. McDaniel, of Sonoma State University, exulted, the conclusion drawn is that "the mind, self, and consciousness are now entirely within the purview of neuroscience. It follows that all other theories of the mind...are consigned to the trash heap."¹⁵⁷

The trash heap is actually a mild sentence for dissenting views; burning is sometimes recommended by dedicated physicalists. When Cambridge biologist Rupert Sheldrake hypothesized that the form and function of living and nonliving entities are influenced by nonmaterial fields, and provided extensive evidence for such in his 1981 book *A New Science of Life*, he was denounced for his apostasy by Sir John Maddox, the esteemed editor of *Nature*. Maddox condemned Sheldrake's tome as "a book for burning."^{158,159} It was a punishment that Galileo, who feared burning, and Giordano Bruno, who experienced it, would have understood.

CONSCIOUSNESS AS FUNDAMENTAL

The centrality of consciousness in the elaboration of what we call reality is not a radical idea, but one that has a long and storied history since humans began to record such things. This view did not cease to exist with the advent of modern science; its proponents have simply been ignored.¹⁶⁰ Examples include Nobel physicist Erwin Schrödinger:

Although I think that life may be the result of an accident, I do not think that of consciousness. Consciousness cannot be accounted for in physical terms. For consciousness is absolutely fundamental. It cannot be accounted for in terms of anything else¹⁶¹.... If we have to decide to have only one sphere, it has got to be the psychic one, since that exists anyway.¹⁶²

Max Planck, the founder of quantum mechanics:

I regard consciousness as fundamental. I regard matter as derivative from consciousness. We cannot get behind consciousness. Everything that we talk about, everything that we regard as existing, postulates consciousness.¹⁶³

Near the end of his life, Planck further said,

As a man who has devoted his whole life to the most clear headed science, to the study of matter, I can tell you as a result of my research about atoms this much: There is no matter as such. All matter originates and exists only by virtue of a force which brings the particle of an atom to vibration and holds this most minute solar system of the atom together. We must assume behind this force the existence of a conscious and intelligent mind. This mind is the matrix of all matter.¹⁶⁴

Psychiatrist Carl G. Jung:

It is almost an absurd prejudice to suppose that existence can only be physical. As a matter of fact, the only form of existence of which we have immediate knowledge is psychic. We might as well say, on the contrary, that physical existence is a mere inference, since we know of matter only in so far as we perceive psychic images mediated by the senses.¹⁶⁵

Astrophysicist Sir Arthur Eddington: “In comparing the certainty of things spiritual and things temporal, let us not forget this: Mind is the first and most direct thing in experience; all else is remote inference.”¹⁶⁶ Physicist Paul Davies, of Arizona State University and the Australian Center for Astrobiology, also believes that consciousness is an essential aspect of the universe, stating, “There must be, it seems to me, a deeper level of explanation...I have come to the point of view that mind — i.e, conscious awareness of the world — is not a meaningless and incidental quirk of nature, but an absolutely fundamental facet of reality.”¹⁶⁷ Sir Martin Rees, Astronomer Royal of England: “In the beginning there were only probabilities. The universe could only come into existence if someone observed it. It does not matter that the observers turned up several billion years later. The universe exists because we are aware of it.”¹⁶⁸ And David Chalmers, cognitive scientist and philosopher at the Australian National University and at New York University: “Consciousness doesn’t dangle outside the physical world as some kind of extra, it’s there right at its heart.”¹⁶⁹

From the foregoing, it may seem as if the defenders of a beyond-the-brain view of consciousness are mainly physicists, consciousness researchers, and philosophers, but I am pleased to report, from a very personal view, that many physicians — my colleagues — are also waking up to an expanded view of the nature of consciousness, such as neurosurgeon Wilder Penfield, already mentioned. I could cite many additional examples, but one shall suffice — the late physician Lewis Thomas (1913-1993), already mentioned. Thomas was dean of New York University Medical School and Yale School of Medicine and, later, director of research and president of the Sloan Kettering Institute in New York, now Memorial Sloan Kettering Cancer Center. Thomas was a no-nonsense physician and bioscientist. He also was a gifted poet and graceful essayist. Among the things he questioned was the destiny of consciousness following bodily death. In his 1974 award-winning book of essays, *The Lives of a Cell*, he wrote:

There is still that permanent vanishing of consciousness to be accounted for. Are we to be stuck forever with this problem? Where on Earth does it go? Is it simply stopped dead in its tracks, lost in humans, wasted? Considering the tendency of nature to find uses for complex and intricate mechanisms, this seems to me unnatural. I prefer to think of it somehow as separated off at the filaments of its attachment, and drawn like an easy breath back into the membrane of its origin, a fresh memory for a biophysical nervous system....¹⁷⁰

Thomas suggested that our separate brains might be undergoing a kind of functional “fusion,” uniting separate minds in a greater whole that resembles a collective view of consciousness or Mind at Large:

We pass thoughts around, from mind to mind, so compulsively and with such speed that the brains of

mankind often appear, functionally, to be undergoing fusion.... Maybe the thoughts we generate today and flick around from mind to mind...are the primitive precursors of more complicated, polymerized structures that will come later....¹⁷¹

THE STUFFING IN THE KEYHOLE

What a piece of work is a man! How noble in reason,
how infinite in faculty! In form and moving how express
and admirable! In action how like an Angel! in
apprehension how like a god!

— William Shakespeare, *Hamlet*, Act 2, Scene 2

Novelist Arthur Koestler wrote, “[We are] Peeping Toms at the keyhole of eternity. But at least we can try to take the stuffing out of the keyhole, which blocks even our limited view.”¹⁷²

The view of conscious we have explored requires removing the stuffing from the keyhole. If we manage to do so, we shall likely experience Havel’s “something higher” — a clearer glimpse of our consciousness, Mind at Large, the Universal or One Mind, the Absolute — not a complete view, for that is beyond our capacity, but a resplendent vision that is as intrinsic to our humanity as our breath and heartbeat. This magnificent view is CPR for the far side of human experience, a vigorous resuscitation of the fact that our consciousness is far more than we have recently taken it to be. It is eternal, infinite, and one.

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Biographical note:

Larry Dossey, MD, is an internist and author of twelve books on the relationships between consciousness, spirituality, and healing, including *Space, Time & Medicine*; *Reinventing Medicine*; the New York Times bestseller *Healing Words: The Power of Prayer and the Practice of Medicine*; *The Power of Premonitions*; and *One Mind: How Our Individual Mind Is Part of a Greater Consciousness and Why It Matters*. His books have been translated into languages around the world. He is the former chief of staff of Medical City Dallas Hospital; the former co-chair of the Panel on Mind/Body Interventions, National Center for Complementary and Alternative Medicine, National Institutes of Health; and the executive editor of the peer-reviewed journal *Explore: The Journal of Science and Healing*. He lives in northern New Mexico with his wife, Barbara, a nurse-educator and award-winning author. He lectures around the world.

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