

# PEAR Lab and Nonlocal Mind: Why They Matter

**H**uman history is largely a reflection of “what ifs.” What if we could make fire, our ancestors wondered? Craft a wheel? Domesticate wild animals? Grow grain? Sail around the world? Fly? Split an atom? Go to the moon? In this issue of *EXPLORE*, we are considering the most important what if ever conceived: what if consciousness is nonlocal—that is, unconfined to specific points in space, such as the brain and body, and unrestricted to specific points in time, such as the present moment? What if consciousness is fundamental in the universe—derived from nothing more elemental, irreducible to nothing more basic? What would be the consequences for healing and for human welfare in general?

In this issue of *EXPLORE*, our window onto these considerations will be the peer-reviewed publications, technical reports, and essays that for more than a quarter century have flowed from the Princeton Engineering Anomalies Research (PEAR) program. This organization was established at Princeton University in 1979 by Robert G. Jahn, then Dean of the School of Engineering and Applied Science, to pursue the rigorous scientific study of the interaction of human consciousness by using sensitive physical devices, systems, and processes common to contemporary engineering practice. Since that time, an interdisciplinary staff of engineers, physicists, psychologists, and humanists has been conducting a comprehensive agenda of experiments and developing complementary theoretical models to enable bet-

ter understanding of the role of consciousness in the establishment of physical reality.

The output of PEAR has been prodigious. It is the largest database of its kind in the world. The sustained ingenuity, precision, and courage demonstrated by the PEAR team in examining how consciousness manifests may be unparalleled in the annals of science—in its ambition, audacity, and reach, exceeding even the Manhattan Project. For what they set out to do, and for what they have achieved, members of the PEAR team to me are *all* heroes and heroines, from technicians to analysts to director. The editors at *EXPLORE* want to see this information made available to a broader audience, especially healthcare professionals, hence this special issue dedicated to PEAR’s accomplishments.

Why do we need PEAR? For nearly all of recorded history, it was taken for granted that consciousness is indeed fundamental and real in its own right. People saw evidence for this belief everywhere. With the ascendancy of empirical science, however, this view was rejected, and consciousness was increasingly considered an illusion, an imaginary ghost in the body’s machinery, a derivative of the brain. As Nobelist Sir Francis Crick, the codiscoverer of the structure of DNA, said in his 1994 book *The Astonishing Hypothesis: The Scientific Search for the Soul*, “The Astonishing Hypothesis is that, ‘You,’ your joys and your sorrows, your memories and your ambitions, your sense of personal identity and free will, are in fact no more than the behavior of a vast assembly of

nerve cells and their associated molecules. As Lewis Carroll’s Alice might have phrased: ‘You’re nothing but a pack of neurons.’ This hypothesis is so alien to the ideas of most people today that it can truly be called astonishing.”<sup>1</sup>

Others agree. As a National Institutes of Health researcher in neurology recently said, “Free will does exist, but it’s a perception, not a power or a driving force. People experience free will. They sense they are free. [But] the more you scrutinize it, the more you realize you don’t have it.”<sup>2</sup> And philosopher and cognitive scientist Daniel C. Dennett says, “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.”<sup>3</sup>

Philosopher Michael Grosso says in his critique of this materialistic perspective, “According to [this] official view, consciousness peeps out momentarily, a flickering phosphorescence of nerve tissue, and is destined to vanish forever after death.”<sup>4</sup> This view is potentially disastrous for the things that have always mattered to humans, such as volition, meaningful choice making, personal responsibility, soul, spirit, and survival of bodily death. “Diminish or destroy brain function, and you diminish or destroy consciousness,” says Grosso. “Verdict on immortality: death of brain implies death of consciousness; the curtain goes down forever. But this is only one possible model. According to such luminaries as Plato, Bishop Butler, F S Schiller, William James, C. D. Broad, and Henri Bergson, the brain, rather than

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produce, is said to detect, transmit, or filter consciousness. A crude analogy 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."<sup>5</sup>

Currently, the proponents of a physicalistic, antipsychic view of consciousness are on a romp, evidenced by evolutionary biologist Richard Dawkins's book *The God Delusion*,<sup>6</sup> Daniel C. Dennett's *Breaking the Spell: Religion as a Natural Phenomenon*,<sup>7,8</sup> and psychologist Richard Sloan's *Blind Faith: The Unholy Alliance of Religion and Medicine*.<sup>9</sup> Will these voices of materialistic triumphalism endure? There are reasons to think that their antipsychic, consciousness-equals-brain certitude has already been eclipsed and that they are clueless about these developments.

Some scholars warn against the runaway enthusiasm that permeates the materialistic camp, where consciousness is concerned. John Searle, one of the most respected mind-body philosophers afoot, cautions, "At our present state of the investigation of consciousness, we *don't know* how it works and we need to try all kinds of different ideas."<sup>10</sup> Philosopher Jerry A. Fodor has observed, "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."<sup>11</sup> Sir John Maddox, former editor of *Nature*, has soberly stated, "What consciousness consists of . . . is . . . a puzzle. Despite the marvelous success of neuroscience in the past century. . . , we seem as far away from understanding . . . as we were a century ago. . . . The most important discoveries of the next 50 years are likely to be ones of which we cannot now even conceive."<sup>12</sup>

Respect for a fundamental role for consciousness is emerging from areas other than consciousness research. Henry P. Stapp, a leading theorist in quantum physics at University of California, Berkeley, observes, "[T]he 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 effect what is true elsewhere in the universe. This nonlocal aspect can be understood by conceiving the universe to be not a collection of tiny bits of matter, but rather a growing compendium of 'bits of information. . . .' And, I believe that most quantum physicists will also agree that our conscious thoughts ought eventually to be understood within science and that when properly understood, our thoughts will be seen to DO something: they will be efficacious."<sup>13</sup> Stapp's view does not validate the findings of the PEAR project, of course, but they seem cordial to PEAR's directions.

After an awkward interlude of nearly two centuries, the idea that consciousness is real, fundamental, and irreducible is returning, in part because of the impact of PEAR over the past three decades.<sup>13</sup> Impressive descriptions of these developments are available in researcher and theorist Dean Radin's books *The Conscious Universe*<sup>14</sup> and *Entangled Minds*,<sup>15</sup> Robert G. Jahn and Brenda J. Dunne's *Margins of Reality*,<sup>16</sup> Stephan A. Schwartz's *Opening to the Infinite*,<sup>17</sup> Wayne B. Jonas and Cindy C. Crawford's *Healing Intention and Energy Medicine*,<sup>18</sup> Richard S. Broughton's *Parapsychology: The Controversial Science*,<sup>19</sup> Etzel Cardena and colleagues' *Varieties of Anomalous Experience: Examining the Scientific Evidence*,<sup>20</sup> and Edward F. Kelly and colleagues' *Irreducible Mind: Toward a Psychology for the 21st Century*.<sup>21</sup>

In 1989, I introduced the term *nonlocal mind* in my book *Recovering the Soul*<sup>22</sup> because of the abundant evidence supporting this particular view of consciousness. Since then, evidence has continued to accumulate. If we unpack nonlocal mind, we can see why this idea is crucial for human existence.

The street meaning of nonlocal is, literally, not local. If something is nonlocal, it is not localized or confined to a specific place in space and time, as mentioned. Nonlocal, therefore, is another word for *infinite*. The implications for consciousness are profound, for if something is nonlocal or infinite in space, it is omnipresent, and if nonlocal or infinite in time, it is eternal or immortal.

In spite of the intellectual indigestion that these ideas evoke in some individuals, there are compelling scientific, historic, and experiential reasons for believing that

consciousness behaves nonlocally or infinitely in space and time. This evidence, some of which appears in the following pages, suggests that space and time are simply not applicable to certain operations of consciousness. Consciousness is both transpatial and transtemporal; it is not *in* space and time.<sup>23</sup>

Nonlocality is a concept also applied by physicists to a class of events whose definition relates to the speed of light.<sup>24</sup> But physics does not own nonlocality, nor do physicists enjoy a monopoly on nonlocal events and the language that describes them. People were routinely experiencing nonlocal manifestations of consciousness millennia before quantum physics was invented in the 20th century, and we are not obligated to cede nonlocality to scientists who have chosen to nuance the term differently.

In striking contrast with materialism's local view of consciousness, the idea of nonlocal mind affirms ancient concepts such as *soul*, *spirit*, and *Buddha nature* that designate an ongoing something that survives the death of the physical body. In short, nonlocal mind not only makes room for immortality, it mandates it. Why? Temporal nonlocality does not mean "for quite a while" or "a long time," but *infinitude* in time: eternity or immortality.

The possibility that science might affirm a nonlocal, immortal quality of consciousness has horrified many scientists for some time. Around 1900, a leading American biologist insisted to Harvard psychologist William James, "Even if such a thing [immortality] 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."<sup>25</sup>

The result of this paranoid point of view, in the opinion of many, has been disastrous. As author George Orwell put it, "The major problem of our time is the decay of belief in personal immortality."<sup>26</sup> This is not admitted within science. Even addressing the topic of immortality in many scientific circles is considered a sign of intellectual weakness or of "going mystic." As Grosso relates, "I once let on to a serious ecologist that I was interested in life after death. He reacted as if I had set fire to the American flag or spat on the

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Shroud of Turin. I was fiddling while Rome burns and worrying about matters picayune and personal while Earth was reeling from corporate plunder and pollution. Wishing to survive death was the worst piece of vanity ever hatched in the brain of *Homo sapiens*. And I had failed to see how in the great scheme of evolution my life had no more meaning than a virus in a pig's nostril.<sup>27</sup>

Make no mistake: the fear of death is humanity's Great Disease, the terror that has caused more suffering throughout history than all of the physical diseases combined.<sup>28</sup> Nonlocal mind is a Great Cure for this affliction, because it assures us that the most essential aspect of who we are cannot die, even though the physical body perishes.

It is only a matter of time before a nonlocal view of consciousness is accepted in science and medicine. No other view is capable of explaining research findings in the field of distant healing and prayer. Currently, 20 controlled clinical trials of remote, intercessory prayer and healing intentions in humans have been conducted.<sup>29-48</sup> Eleven demonstrate statistically positive results, far more than would be expected by chance. Nine systematic or meta-analyses of this body of research have been done; eight report positive findings.<sup>49-58</sup> Humans can also influence the physiology of each other at a distance, even when the distant individual is unaware that the effort is being made.<sup>59-61</sup> In addition to these human studies, scores of experiments reveal that human intentions can act remotely to influence cellular function,<sup>62</sup> microbial growth,<sup>63-65</sup> the growth of tumors in animals,<sup>66,67</sup> the germination of seeds and the growth of plants,<sup>68</sup> and the kinetics of biochemical reactions.<sup>69-71</sup> These studies in biological systems are buttressed by hundreds of experiments in nonbiological settings in which human intentions exert statistically significant effects,<sup>15,72-74</sup> an area of research to which the PEAR lab has substantially contributed, as the remainder of this issue attests. The most thorough evaluation to date of the quality of the research in these fields, by physician-researcher Wayne Jonas, former director of the National Institutes of Health's National Center for Complementary and Alterna-

tive Medicine, and his colleague Cindy C. Crawford, has given it high marks.<sup>54</sup>

The studies in distant healing and intercessory prayer reveal that nonlocal mind is intimately connected with love, compassion, and deep caring, just as healers throughout history have maintained.<sup>75,76</sup> This is one of the great lessons of the healing experiments: love and empathy, operating through nonlocal mind, can literally change the world.

Similar lessons crop up in the PEAR experiments. Robert G. Jahn, PEAR's founder and program director, states, "The most common subjective report of our most successful human/machine experimental operators is some sense of 'resonance' with the devices—some sacrifice of personal identity in the interaction—a 'merging,' or bonding with the apparatus. As one operator put it: 'I simply fall in love with the machine.' And indeed, the term 'love,' in connoting the very special resonance between two partners, is an apt metaphor. . . ."<sup>77</sup>

Some scientists believe that love has no place in objective science. Jahn disagrees: "[A]llusions to [love] can be found in scientific literature, none more eloquent than that of Prince Louis de Broglie, one of the patriarchs of modern physics, who said, 'If we wish to give philosophic expression to the profound connection between thought and action in all fields of human endeavor, particularly in science, we shall undoubtedly have to seek its sources in the unfathomable depths of the human soul. Perhaps philosophers might call it 'love' in a very general sense—that force which directs all our actions, which is the source of all our delights and all our pursuits. Indissolubly linked with thought and with action, love is their common mainspring and, hence, their common bond. The engineers of the future have an essential part to play in cementing this bond.'"<sup>77,78</sup>

The experiments in nonlocal healing show that the prayers of all religions appear to be effective. This should not be surprising, if the key factor in healing intentions—de Broglie's "force which directs all our actions"—is love, because it is a core element of all major religions. This does not subvert a role for a Supreme Being in the Christian tradition; scripture says that God *is* love. Even nontheistic prayer, as in some forms of Buddhism, appears to re-

sult in healing, as do secular and so-called pagan intentions that are not associated with any traditional religion. These findings are important. They democratize and universalize healing intentions and prayer. These studies reveal that no religion enjoys a monopoly on the nonlocal effects of prayer, and they are therefore the enemy of religious intolerance.<sup>79</sup>

Attention to nonlocal mind will eventually transform the core outlook of modern medicine.<sup>19,80</sup> Currently, the type of medicine that prevails in our culture could be called Temporal Medicine, because it assumes linear, flowing time with its inevitable correlates of aging, infirmity, disease, and death. But nonlocal mind makes possible another approach—Eternity Medicine, which is based on the evidence of a temporally infinite aspect of consciousness.<sup>81,82</sup> Eternity Medicine comes into play anytime we honor our boundless, eternal, nonlocal nature. Eternity Medicine recognizes that something, however named, endures beyond the death of the physical body. The beginning assumption of Temporal Medicine is death and annihilation; Eternity Medicine assumes immortality, not as something to be acquired, cultivated, or engineered, but as innate and fundamental. This transforms the fatalistic premise of modern medicine. As a result, a fizz rises: fear relents, the pressure eases, the future brightens. A lightness and perhaps a sense of humor enter. Life, not death, is now our birthright and a condition of our being.<sup>83-85</sup>

In order for this transformation to continue, we shall need not only more good consciousness-and-healing research within medicine,<sup>86</sup> but also parallel science such as that done in the PEAR program. The reasons are straightforward. Healing studies in humans offer many challenges. As only one example, in double-blind studies of intercessory prayer, patients often pray for themselves or their loved ones pray for them, even though they are in the control group that is not assigned prayer. Although this complicating factor can be overcome by doing healing studies in animals, microbes, or plants, it can be eliminated entirely in the various types of studies done at PEAR. In them, the subjects are inanimate devices such as mechanical, electronic, optical, acoustical, and fluid devices. The experiments of PEAR buttress healing studies in humans because they, like human studies,

point to a nonlocal manifestation of consciousness that appears demonstrable, repeatable, real.

If mind is genuinely nonlocal, then it is boundless and boundaryless.<sup>87</sup> This means that individual minds cannot be separated and walled off from one another. In some dimension, minds come together and form what Nobel physicist Erwin Schrödinger called the One Mind, and what our ancestors called the Universal Mind.<sup>88</sup> Shared mind has enormous ethical implications, because it implies that what we do to others we do to ourselves, and vice versa. This leads to a reformulation of the Golden Rule, from “Do unto others as you would have them do unto you,” to “Do good unto others because in some sense they are you.”

Critics often accuse consciousness researchers of attempting to subvert hard, practical science by homogenizing it with mysticism and spirituality. Consciousness researchers, they say, neglect life’s immediate problems. They are interested in souls, spirits, and a dreamy afterlife. Medical science should be about solving problems here and now; spiritual affairs and the afterlife should be left to the theologians, ministers, priests, rabbis, and imams.

Philosopher David Griffin, one of the best-informed scholars on these issues, disagrees. He sees several practical benefits of a belief in immortality, which as we’ve seen, is one of the most obvious implications of nonlocal mind. He says, “Such a belief can help overcome the fear of death and extermination. . . . If people are convinced they are ultimately not subject to any earthly power, this can increase their courage to fight for freedom, ecologically sustainable policies, and social justice. . . . If people believe that this life is not the final word, and that justice will prevail in the next life, this can help them withstand the unfairness they encounter in the here and now. . . . The idea of life as an ongoing journey, which continues, even, after death, can lead to a greater sense of connection with the universe as it unfolds into the future. . . . The belief in life after death can help counter the extreme degree of materialism that has invaded every niche of modern civilization. . . . The belief that we are on a spiritual journey, and that we have time to reach our destination, can motivate us to think creatively about what

we can do now—socially, internationally, and individually—to move closer to what we should be in the here-and-now.” Griffin continues, “I believe the human race now faces the greatest challenge in its history. If it continues on its present course, widespread misery and death of unprecedented proportions is a certainty within the next century or two. Annihilation of human life, and of millions of other species as well, is probable. This is so because of polluting technologies, economic growth-mania, out-of-control population growth, global apartheid between rich and poor nations, rapid depletion of nonrenewable resources, and proliferation of nuclear weapons combined with a state of international anarchy that makes war inevitable and sufficient measures to halt global ecological destruction impossible. . . . What seems clear . . . is that . . . a transition in world order, if it is to occur, will have to be accompanied by a widespread shift in worldview, one that would lead to a new sense of adventure, one replacing the modern adventure of unending economic growth based on the technological subjugation of nature and the military and/or economic subjugation of weaker peoples. Only, I am convinced, if we come to see human life as primarily a spiritual adventure, an adventurous journey that continues beyond this life, will we have a chance of becoming sufficiently free from destructive motivations to effect a transition to a sustainable global order.”<sup>89</sup>

The PEAR researchers have *not* attributed the above implications to their work; these psychospiritual inferences are mine, not theirs, and any overreaching is my error alone. Yet people around the world find inspiration and hope in the PEAR program for many of the reasons I have outlined. For them, the implications of the PEAR data are as uplifting as the tenets of materialism are depressing.

Our poor, tortured world is aflame with the countless hatreds of a thousand sects, and “me against you” has become the order of the day. Nonlocal mind, illuminated by the PEAR lab research, is the enemy of this madness. It enlarges the compass of existence and opposes barriers, boundaries, and bigotry.<sup>90</sup> It is an imprimatur for humans to behave kinder and gentler toward one another and to the Earth and all of its creatures.

What could be more important?

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