Invited Address

SPIRITUALITY, SCIENCE AND THE MEDICAL ARTS

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ABSTRACT

After a century of neglect, spirituality is returning to the practice of medicine. Controlled studies in distant healing and intercessory prayer challenge ingrained assumptions of the nature of consciousness and the mind-body relationship. Current evidence suggests that consciousness can both *insert* information *into* the environment, and *extract* information *from* it. Both these vectors are health-relevant. Although energy-based models of healing may suffice to explain many of the phenomena taking place within the healer and healee, and in the immediate vicinity of each, a genuinely nonlocal, non-energetic framework is necessary to explain how the spatiotemporal gap separating the two is bridged. The implications of nonlocal mind transcend health and illness, and involve the survival of bodily death and immortality.

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The subtlety of nature is vastly superior
to that of argument.
—Sir Francis Bacon

I want to express my deep appreciation for the opportunity to be here. This gathering is more like a family reunion than a conference! We are a family because we share common values—and values are a valuable part of science. As Mary Midgley, the British philosopher, has said, "[T]here are facts which we cannot know unless we first get the values right."[1] And the most fundamental value we share is the principle that consciousness matters in the world.

There are people in this organization with whom I have long felt a deep kinship. Like many of you, I go back to the early days of biofeedback research, when the concepts of mind-body interaction and self-regulation were considered not only controversial but subversive. I am one of those clinicians who had their office raided back in the mid-70s. One morning, two U.S. Customs agents barged into my office and announced that they had come to take possession of my biofeedback instruments, which I was using in my practice of internal medicine. So I feel bonded with many of you not only through shared values but through shared adversity as well.

SINGING OUR SONG

There is an old Chinese saying: "A bird sings not because it has an answer. It sings because it has a song." We are here not because we have final answers, but because we have a song to sing.

What is the song? It is a piece of wisdom that has existed for more than 99% of the history of the human race—again, the concept that consciousness matters. Factors of consciousness, however conceived, whether as mind, spirit, soul, and so on—these factors are greatly important in how the world gets on. Take away this song and you cannot understand the drift of human history. This understanding has informed human cultures for thousands of years and has been a key part of human healing traditions for at least 50 millennia.

A Short History

For the past 20 years, this song has been in the process of being transcribed into a new key in which the twin melodies of spirituality and medical science are becoming intertwined. How did this happen?

Beginning in the early 1980s, a young social epidemiologist working on his Ph.D. dissertation made a startling discovery—more than 200 studies done across a century showed that religious and spiritual practices correlated with better health and increased longevity. That individual was Jeff Levin, former president of ISSSEEM. You can read about how this happened in Jeff's magnificent new book, *God, Faith, & Health.*[2] The results of Jeff's work have been astounding. In 1993, only 3 of the nation's 125 medical schools had formal course work in this field; now, more than 80 have such. Last year, Koenig, Larson and McCullough published the *Handbook of Religion and Health*, which updated the subsequent research in this field to around 1,200 studies.[3] Take a bow, Jeff. You jump started this field and you deserve credit.

Now, this may sound harsh. I believe that the spirituality-and-health field, in its short 20-year history, has already begun to stagnate. Workers in this field are drowning in contradictions of their own making, which are due to their fears about the nature of consciousness. They have come face-to-face with the nonlocal, infinite nature of the mind and they are scared stiff. The current tendency on the part of researchers in the religion-and-health field is to deny the nonlocal, distant manifestations of consciousness—distant healing, psychic healing, distant intentionality, intercessory prayer, and so on—and to confine the effects of consciousness within the individual. Of course there are intrapersonal, local effects of consciousness; that's what mind-body medicine is all about. But this is merely the tip of the iceberg. Researchers are horrified to talk about the distant operations of consciousness for various reasons—none of which, as far as I can tell, have anything to do with the data. They are afraid they'll be considered weird, fringe, and new-age by their peers. They are concerned that skeptics will associate their fragile new field with "alternative medicine" and that demonic field of "parapsychology,"[4] not realizing that most professional psi researchers can think circles around them on issues involving the distant effects of the mind. The paradoxes here are serious. For example, many of the religion-and-health scholars are

deeply religious, often evangelically so. They pray fervently. Yet in their professional lives they deny that prayer does anything to change the state of the world nonlocally. Many don't see the contradiction. I submit that no field can flourish if it becomes mired in such craziness.[5]

There is a way out of these contradictions, which involves honoring the experimental evidence in this field. Over two decades ago, a few brave souls began to do studies in distant healing. One of the first was Bernard Grad of McGill University, whose work is of Nobel caliber.[6] Others individuals followed, including Barry,[7] Tedder and Monty,[8] Watkins and Watkins,[9] Nash,[10] and many others

A key contribution was made by Dan Benor.[11] Dan corralled all the studies in distant healing in a monumental 4-volume work, *Healing Research,* much like Jeff Levin had done in the religion-and-health field.

So where are we headed? We are agonizing our way toward a view of consciousness that is new to science, but is, as I've said, an old song. Consciousness is being redefined in ways that allow it to manifest both locally and nonlocally. Many scholars, such as David Chalmers of the University of Arizona, have begun to describe consciousness as *fundamental* in the universe.[12] Somewhere the great shamans and mystics must be having a deep belly-laugh, because this basic idea has been around for millennia. As Mark Twain once put it, "The ancients stole all my best ideas."

SPIRITUAL EXPERIENCE AND HEALTH

How does spiritual practice influence health? Some of the reasons conform to common sense. Many spiritually oriented people simply live healthier lives: they smoke and drink less, they have high levels of social support, they follow safe-sex practices, they adhere to a healthy diet, and so on. But I suggest that there is something about the immersion in spiritual ritual that can change one's physiology far more profoundly than these down-to-earth health habits.

For example, consider a ritual of the Sufi sect of Islam.[13] In one particular version, the men come together in the evening to fast, dance, and pray through

the night. Toward morning they engage in activities such as piercing parts of their bodies, believing this honors Allah. These events are astonishing because they are not associated with bleeding or infection; they do not cause significant pain; and they heal up quickly with little or no scarring. The key observation, it seems to me, is that the immersion in spiritually meaningful rituals can create profound alterations in the known laws of physiology. These phenomena are currently the subject of an intense research effort at the University of Durham in England.

It gets weirder. I suggest that engaging in spiritually meaningful rituals such as intercessory prayer can affect not only our own physical function but also that of other, distant persons. And the reason to suggest such a possibility is a word that makes all the difference in science: data.

The most common form of distant healing is prayer. Prayer has never vanished from medicine, and even today it is commonly used by physicians. Recently a female surgeon said to me, "I want to share with you the prayer that I always offer before I go into surgery. When I'm scrubbed, gowned, and gloved, I hold up my hands and say, 'Dear God, these are your hands. Now don't go and embarrass yourself!'"

MIND AND BRAIN

The reason we consider the idea of intercessory prayer to be outrageous in medicine is because we have equated the mind and the brain. The brain is a local entity, confined to the cranium, which means that the mind cannot operate remotely, at a distance, nonlocally. The distant effects of prayer are therefore impossible in principle—so it is said.

Yet this presumption is premature. John Searle, who is one of the most prestigious mind/body philosophers in the West, has said, "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."[14] Similarly, philosopher Jerry Fodor has said, "Nobody has the slightest idea how anything material [such as the brain] could be conscious. Nobody knows what it would be like to have the slightest idea how anything material could be conscious. So much for the philosophy

of consciousness."[15] This is an accurate appraisal of where we stand in our current knowledge of consciousness and its relationship to the brain. It is important to acknowledge our appalling ignorance in this field, because this opens the door to information we will now look at.

DISTANT HEALING STUDIES

What is prayer? I've had the opportunity to ask tens of thousands of Americans this question. For most of them, prayer involves talking aloud or to yourself to some white, short tempered, male cosmic parent figure who prefers to be addressed in English. I will not address the linguistic, gender and racial limitations of this view, which I reject. We need to adopt a broad definition of prayer, for if we define it too narrowly we will disenfranchise most of the world's population, who pray differently than most people in our culture. So I hope you will consider a purposefully ambiguous, generous definition: Prayer is communication with the Absolute. And I ask you to define "communication" and "the Absolute" in terms of your own spiritual tradition and personal insight.

I want briefly to describe how I was drawn into this area, because I believe it resonates with the experiences of many contemporary physicians when they first encounter these issues. Basically it was a process of kicking and screaming; I did not want to become involved with prayer and healing. I was busy exploring the mind/body relationship within the individual, and I felt this area would occupy me for the rest of my life. But someone back in the mid 80s gave me a copy of a controlled, double-blind study in intercessory prayer, and it changed my focus. This was the famous study of cardiologist Randolph Byrd involving heart patients at San Francisco General Hospital.[16] This study, though not the best prayer study that has been done, nonetheless established a principle that was new to nearly everyone—that prayer can be tested in the clinic or the hospital using randomized, prospective, double-blind, controlled precautions, just as you would test a new medication.

Byrd's study involved nearly 400 patients with heart attack or severe chest pain. Everybody received high-tech coronary care, but half of the patients had their first names given out to various prayer groups around the country, who were

asked simply to pray in the way they thought best. No one knew who was receiving prayer and who was not. When the data were analyzed it appeared as if the prayed-for group had been given a special advantage. There were fewer deaths in the pray-for group (though this difference was not statistically significant); fewer people receiving prayer had to be hooked up to the mechanical ventilator and given CPR; fewer people receiving prayer developed pulmonary edema, filling of the lungs with fluid; and the prayed-for group required fewer potent medications. If a new medication instead of prayer was being evaluated, this would have been hailed as a modern medical breakthrough. This study stunned the medical profession so severely that it took about 10 years for us to collectively recover and try to replicate Byrd's experiment.

When I encountered this study I became extremely uncomfortable. I had patients in the coronary care unit all the time. At that time prayer was not important to me and I did not pray for my patients. But it soon became clear that if this study was good science and if prayer did indeed affect the clinical outcome of heart patients, and if I wasn't employing it, this constituted a potential ethical and moral dilemma. How could I justify withholding something which good science says is helpful? To resolve this dilemma, I decided to search out other studies in this field, thinking I might find two or three more. I quickly bumped into the work of Dan Benor, who I've mentioned. After exploring this field for many years, I decided that this was one of the best-kept secrets in modern medicine. Long before I finished my examination of this database—around 130 studies, two-thirds of which showed statistical significance—I began to pray for my patients, and I continued doing so until I left my practice a few years later.

The most high-profile prayer study currently in the United States has been accepted for publication in the *American Heart Journal.*[17] It is the first prayer study ever published in a peer-reviewed cardiology journal. It is being done at Duke Medical Center in North Carolina, one of the most respected medical facilities in the world. The primary scientists involved are Dr. Mitchell Krucoff, who directs Duke's cardiovascular labs, and nurse-research methodologist Suzanne Crater. Here is a brief description. When patients with chest pain report to the hospital and need cardiac catheterization and perhaps angioplasty, in which the coronary arteries are mechanically dilated, they are given an option of becoming part of this prayer experiment. If they say yes, they are randomly assigned either to a group receiving conventional treatment or to a group

receiving conventional treatment plus prayer. This is a double-blind study, meaning that no one knows who is in which group. If patients are assigned to the prayed-for group, they begin receiving, overnight, more prayer than they've probably received in their life. Their names are e-mailed to prayer groups around the world—Buddhist monks in monasteries in the Orient, Jewish prayer groups in Jerusalem, Carmelite nuns cloistered outside of Baltimore, the Unity Church's prayer ministry, and Protestant churches in North Carolina. What difference does the prayer make? Those who receive the prayer have 50% to 100% fewer side effects from cardiac catheterization and angioplasty than people who are just treated conventionally. Although this is a pilot study with too few patients to be statistically significant, this is a huge difference. This study has been expanded now to many other hospitals in the country.

Another study in distant healing, which often took the form of prayer, involved patients with advanced AIDS at California Pacific Medical Center, a major teaching hospital of the University of California-San Francisco School of Medicine.[18] All the patients were treated conventionally with triple drug therapy, but half of them had their names given out to healers around the U. S. These healers had made a tremendous commitment to healing, with a minimum of 15 years of experience doing healing work. They committed at least one hour a day to prayer for the AIDS patients for several weeks. Again, this was a double-blind study, with no one knowing who was and was not receiving the distant healing influence. In the first version of the study, 40% of the unprayed-for people died, while no one died in the group rendered distant healing. There was some asymmetry in the ages of the two groups, so the researchers doubled the number of patients and did the experiment again, looking at the incidence of diseases that usually kill AIDS patients—pneumonia, encephalitis, etc.—and the frequency and duration of hospitalization. Again the results strongly favored the group receiving the distant healing or prayer.

EXTRACTING INFORMATION FROM THE WORLD

Distant healing and intercessory prayer involve our ability to *insert* information *into* the world. But consciousness can also *extract* information *from* the world, in ways that are important to health. Here's a study that shows what this latter ability looks like.[19] It involved Sudden Infant Death Syndrome or

SIDS, in which the baby is found dead in the crib. The researchers asked parents whose babies died of SIDS: Did you ever know this was going to happen to your baby? Did you ever have a premonition or a hunch that your baby was headed for trouble—and was this so real that you made an issue of it with your pediatrician? 21% of these parents said yes.

Then the researchers wondered, Is this merely a worry which 21% of parents have? So they asked hundreds of parents of normal babies the same question, and only around 2 to 3% said yes. When the worried parents took their concern to the pediatrician, *in every instance* the physician responded to the parents with what the researchers called condescending denial or actual outrage. The physicians were offended that parents would dare suggest a course of action on the basis of an intuition or hunch about what might happen in the future. If these doctors had had a world view that permitted consciousness to function nonlocally, outside the confines of the brain, body, and the present, scanning the future and bringing back critical information, they would have been more willing to take extra precautions—in which case some of those babies would probably still be alive.

So when we talk about nonlocal manifestations of consciousness, we move beyond cute little parlor tricks to issues of life and death.

I would like to make a not-very-subtle plug for the latest book by Barbara, my wife—*Florence Nightingale: Mystic, Visionary, Healer.*[20] If you are interested how spiritual sensitivity can help bring healing into the world, you have only to read this award-winning, illustrated biography. And let us also thank nurses, past and present, who have kept alive the flame of healing across many centuries.

WHAT SCIENTISTS BELIEVE

I often hear skeptics say that "real" scientists believe none of these things and don't get involved with these issues. This is a piece of stereotypical nonsense that needs to be laid to rest. A survey published 3 years ago in *Nature*, one of the most prestigious science journals in the world, found that 40% of working biologists, mathematicians and physicists not only believe in a supreme

being, but they believe in the sort of supreme being who would respond to distant intercessory prayer.[21]

MODELS AND MODELING

Skeptics also say that experiments in prayer and distant healing cannot be valid because there is no theory in science that permits consciousness to operate at a distance. We know in advance, therefore, that studies supportive of distant healing must be wrong. Now, this is a peculiar way to do science, tossing out data in defense of one's pet theory about how the world ought to behave.

In the history of medicine, we often have known that something works before we understand how it works. When British naval surgeon James Lind discovered that lemons and limes cured scurvy on HMS *Salisbury* in the mid-1700's, nobody had a clue about the mechanism involved. We still don't know how general anesthetics work. But we don't abandon or reject general anesthesia because we are ignorant of its mechanism. We're in the same boat with distant healing. So we must be patient with our ignorance, and not use it as an excuse to condemn what we do not understand.[22]

But it is not true that we have no theories about how distant intentionality and healing may operate. We are actually drowning in such theories; there are easily a couple of dozen of them. Theorists include the Cambridge Nobel physicist Brian Josephson; mathematician C. J. S. Clarke of the University of Southampton;[23] cognitive scientist/mathematician David J. Chalmers of the University of Arizona, as mentioned; quantum physicist Henry Stapp of the University of California-Berkeley, and many other respected scholars. As Stapp puts it, "[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."[24]

When we ask how distant healing works, most of us invoke images and assumptions drawn from sensory experience. We imagine that a healer "sends" some sort of energy, gross or subtle, to the healee. We assume that intentions have a direction, that they go somewhere, and that they cause something to happen downstream in time. Yet these sensory-based, classical assumptions are not very helpful in explaining the actual data of distant healing.

A theoretical model should ideally explain empirical findings. This means that the starting point in developing a theory or model should be the data flowing from actual observations and experiments. What sort of model is needed to accommodate the data surrounding distant intentionality and healing?

We need to distinguish at least three phases of distant healing. First, there are the events taking place in and around the healer; second, there are the events happening in an around the healee; and third, there are the phenomena that occur in the in-between gap between the two. Energy-based explanations based on classical concepts work fine for the healer and healee, but not for what occurs in the area separating the two when they are far apart. Let's focus on the most challenging question of all—what goes on in this nonlocal gap.

The studies involving distant healing/intentionality display several key characteristics:

(1) These phenomena appear independent of space—i.e. they are as robust at global distances as at the bedside. They don't obey the inverse square law of classical physics, according to which energetic phenomena become weaker with increasing spatial separation.

(2) These phenomena appear to be outside of time. In many instances they appear to be immediate, and in other instances they appear to be time-reversed, with the effect appearing before the cause. Around two dozen controlled studies involving "retroactive intentional influence" have been recently analyzed by William Braud.[25]

(3) The gap phenomena do not appear to be mediated by any of the four types of energy known in modern physics. Indeed, no actual energy has yet been detected. Moreover, energy transmission requires time, which is often violated in distant intentionality phenomena.

In summary, therefore, these gap phenomena appear to be unmediated (by any known form of energy), unmitigated (by spatial separation), and immediate (or time-reversed).[26-28] Therefore, any model that is up to the task of explaining the gap phenomena in distant healing and distant intentionality must be genuinely nonlocal. To the extent that a model permits the nonlocal nature of these events, it merits our consideration; if it does not, then we may safely dismiss it as limited.

I realize that perhaps most people involved in so-called "energy healing" don't agree with this assessment. They prefer models of distant intentionality and healing that make full use of the concepts, images, and vocabulary of "energy." Certainly we can make fruitful use of energy-based, classical descriptions within the healer and healee, and in their immediate vicinity. But energetic explanations seem to have no hope in principle of explaining the in-between phase in which independence from space and time is the rule. So I challenge you always to ask whether energetic transmission is consistent with the empirical, nonlocal characteristics of the gap phenomena.

Why are these issues important? If we wish to have a seat at the table of science, we must speak the language. This requires following the accepted meaning of "energy," and what it can and cannot do. Of course we are free to use private meanings which scientists don't agree with. But we cannot have it both ways. We cannot expect to be taken seriously within the scientific community if we resort to a vocabulary and definitions that are not shared by our conventional scientific colleagues.

I favor languaging distant healing in a way that invokes commonly accepted terms within science. The reason is straightforward. If we want to make a difference within medical science and influence the medical culture, we should go through science and not around it, if we can. Science is one of the most influential factors in our culture; we should not be cavalier in skirting it. And we *can* go through science on these issues, and make a huge difference! We are already doing so!

Let us acknowledge *we don't know* how distant healing occurs. It is perfectly acceptable in science to say that a process works, but that the mechanism is not understood. The least helpful tactic is to adopt a model which is not supported by the data, to language it in terms that lie outside science, and to

call the model scientific. If we do so, we should not be surprised if we find ourselves shut out of scientific dialogue.

ETERNITY MEDICINE

This we know: consciousness manifests nonlocally. The implications of this fact are enormous. Lying outside of space, consciousness is omnipresent, present everywhere. As such, there is no necessity for consciousness to "go" anywhere or to be mediated by anything at all: it's already there. Lying outside of time, consciousness is immortal and eternal.

In my previous writings, I have described three eras of medicine — Era 1, physicalistic medicine; Era II, mind-body medicine; and Era III, nonlocal medicine.[29] Era III can also be called Eternity Medicine because it acknowledges the eternal, immortal aspects of consciousness. An internist friend of mine told me he rather liked the idea of Eternity Medicine, because this gave him an opportunity to be not only an internist but an *eternist* as well.

Eternity Medicine involves the recognition that the most essential part of who we are cannot die if it tries. If we accept this fact, which is implied by the nonlocal findings of hundreds of empirical studies in distant intentionality, the premises of medicine and healing become radically transformed. The fear of total annihilation with physical death is annulled; death appears less tragic; survival of consciousness is assured.

Although the medical profession is in the process of becoming re-spiritualized, we should not be complacent. There is much work to be done, and time is not on our side. On every hand there are those who are working vigorously to discredit the evidence for nonlocal mind and to return medicine to a purely physicalistic approach. Our situation is urgent. As the great French novelist, André Malraux, said, "The twenty-first century will be spiritual, or it will not be at all."

Let us *claim* the nonlocal qualities of consciousness! This is the great challenge that faces those of us who believe in distant intentionality and healing. And as we carry these issues forward, let us work together in a spirit of cooperation and mutual support. This field does not need solitary warriors. Remember

the aphorism: "We are all angels with only one wing. We can only fly if we embrace one another."

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