

Healing Research: What We Know and Don't Know

"Something unknown is doing we don't know what."

—Sir Arthur Eddington¹

"Not everything that counts can be counted, and not everything that can be counted counts."

—Albert Einstein, attributed

"No directions came with this idea."

—William Maxwell²

Our ignorance about healing vastly exceeds our understanding. Some people see this mystery as a good thing. For example, when I published a book in 1993—*Healing Words: The Power of Prayer and the Practice of Medicine*³—that attempted to clarify these questions, a reviewer wrote, "Life, ultimately, is a mystery . . . In the past year, I have found myself yearning for the mystery, faith, and rapture to be restored to my spirit. I want more prayer and less analysis."⁴

This point of view that some things should not be subjected to dissection, analysis, and the empirical methods of science has a long history. Benjamin Jowett (1817-1893), the great 19th-century Plato scholar, theologian, and master of Balliol College at Oxford, felt this way. He grumbled, "Research! Research! A mere excuse for idleness; it has never achieved, and will never achieve any results of the slightest value."⁵

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Even Einstein occasionally emphasized the limitations of science. He is reported to have said (although it may be apocryphal), "If we knew what we were doing, it would not be called research, would it?"⁶

HEALING RESEARCH: THE BEGINNING

We've been bumping into the mysteries and paradoxes of healing intentions and prayer since the first published prayer study, an 1872 survey by Sir Francis Galton, the cousin of Charles Darwin. Galton reasoned that, since monarchs and highly placed clergy were regularly prayed for (God save the queen!), their health and longevity should exceed that of ordinary people if prayer is effective. He discovered the opposite—that sovereign heads of state lived the shortest lives "of all who have the advantage of affluence."⁷

Skeptics love to quote Galton's study, but it was a dreadful exercise, a retrospective stab in the dark that was, one might say, too cute by half. Galton failed to take into account a host of confounding factors, one of which has been pointed out by theologian John Polkinghorne, a physicist and fellow of the Royal Society. He suggests that one of the main reasons sovereigns lived shorter lives was because they were exposed to one of the greatest health hazards of the day—the continual ministrations of the medical profession.⁸ If you were a European monarch in the 19th century, there simply was no escaping the brutalities of physicians and the often lethal effects of their leeching, bleeding, and purging.

The classic American example of this phenomenon involved the death of George Washington, our first head of state. Some historians believe he was essentially bled to death by his team of well-meaning physicians.⁹

MODERN PRAYER-AND-HEALING STUDIES

Paradoxes abound in prayer research. For example, if prayer is effective, many people say "the more the better." Perhaps not. Rupert Sheldrake, the British biologist who spent years in India, was intrigued by the fact that most married couples in India prefer having sons, and that they routinely ask holy men to bless their marriage. Toward this end, Indian holy men pray incessantly. With roughly one fourth the earth's population in India, that's a lot of prayer for male babies. But when Sheldrake compared the incidence of male births in India and England, where the preference for sons is not as strong, he found the same statistic: 106 male births to 100 female births, which is the same in nearly all countries.^{3(p172)}

Modern prayer-and-healing research was launched around the midpoint of the 20th century. From 1951 through 1965, three studies explored the correlation of intercessory prayer with psychological well-being, childhood leukemia, and rheumatoid arthritis, respectively.^{3(pp170-179)} Although one study claimed statistical significance, the other two did not. These studies were not well designed and were poorly reported. They contribute little to our understanding of healing intentions.

We can, however, give these researchers a nod of appreciation for getting the ball rolling.

The most famous prayer study is that of cardiologist Randolph Byrd, published in 1988.¹⁰ This controlled clinical study took place at University of California, San Francisco, School of Medicine and San Francisco General Hospital. It involved 393 patients admitted to the coronary care unit for heart attack or chest pain. Although there was no statistically significant difference in mortality between the groups, those receiving assigned prayer did better clinically on several outcomes. Areas of statistical significance included less need for cardiopulmonary resuscitation, less need for potent medications, and a lower incidence of pulmonary edema and pneumonia in the group receiving intercessory prayer from prayer groups around the United States. These differences, although statistically significant, were not earthshaking: a 5% to 7% advantage for the prayed-for group.

Although it was the first major prayer experiment, the Byrd study is not the best; it could have been improved in many ways, as I've described elsewhere.^{3(pp179-186)} Byrd deserves great credit, however, for this courageous effort, which could hardly have embellished his career as an academic cardiologist at one of the nation's best medical schools. His great contribution was establishing a principle that came as a shock to most physicians, including me—one can study prayer in a clinical setting much as one studies a physical intervention such as a new medication.

If we fast-forward to present time, we can identify around two dozen major-controlled studies in humans, approximately half of which show statistically significant results favoring the intervention group toward whom healing intentions were extended.^{11(pp216-232)}

Approximately eight systematic or meta-analyses of studies involving healing intentions and prayer have been published in peer-reviewed journals.^{11(pp226-229)} All but one arrived at positive conclusions. The most thorough analysis is that of Wayne B. Jonas, MD, the former director of the NIH National Center for Complementary and Alternative Medicine, and Cindy C. Crawford. In their 2003 review, they state:

We found over 2,200 published reports, including books, articles, dissertations, abstracts and other writings on spiritual healing, energy medicine, and mental intention effects. *This included 122 laboratory studies, 80 randomized controlled trials, 128 summaries or reviews, 95 reports of observational studies and nonrandomized trials, 271 descriptive studies, case reports, and surveys, 1,286 other writings including opinions, claims, anecdotes, letters to editors, commentaries, critiques and meeting reports, and 259 selected books [emphasis added].*^{12(ppxv-xix)}

The following categories are included in the data analyzed by Jonas and Crawford:

- religious practice
- prayer
- “energy” healing
- Qigong (laboratory research)
- Qigong (clinical research)
- laboratory research on bioenergy
- DMILS (direct mental interaction with living systems; remote influence on electrodermal activity)
- DMILS (direct mental interaction with living systems, such as remote staring)
- MMI (mind-matter interaction, such as the remote influence of individuals on random event generators)
- MMI (mind-matter interaction, such as the remote influence of a group with random event generators, so-called field-REG experiments)
- healing in a group setting

In assessing the quality of healing studies by using strict Consolidated Standards of Reporting Trials (CONSORT) criteria, Jonas and Crawford give the highest grade, an *A*, to lab-based, mind-matter interaction studies, and a *B* to the prayer-and-healing studies. Religion-and-health studies get a *D* because they are epidemiological-observational studies and are not blinded and controlled.

This context does not permit us to review even the main healing studies, which I have done elsewhere.^{11(pp216-231)} So too has Daniel Benor, MD, whose pioneering contributions in this field deserve special recognition.¹³

Neither can we examine the main skeptical responses to prayer-and-healing studies in general. David Hufford, of Penn

State College of Medicine, and I have discussed these elsewhere.¹⁴

What do these studies tell us? In their assessment of this field, Jonas and Crawford conservatively conclude:

There is evidence to suggest that mind and matter interact in a way that is consistent with the assumptions of distant healing. Mental intention has effects on nonliving random systems (such as random number generators) and may have effects on living systems. While conclusive evidence that these mental interactions result in healing of specific illness is lacking, further quality research should be pursued.^{12(ppxv-xix)}

This conclusion is so cautious many healers insist that it does not go far enough. I disagree. The key question is not how large the effects are, but whether they exist at all. In fact, the Jonas and Crawford conclusion is radical because it suggests what conventional science considers unthinkable: that human consciousness can act *nonlocally* to affect the so-called material world at a distance, beyond the reach of the senses. This involves a fundamentally new way of thinking about the nature of human consciousness and its place in the world.

These findings represent more than a new tool in the physician's black bag. Although it's true that intentionality, including prayer, has been used throughout history to heal illness, this practical side is not the primary contribution of the emerging evidence. The key significance is the non-local nature of consciousness that is suggested by these studies. This implication dwarfs whatever pragmatic benefits these studies convey.

Many skeptics realize what's at stake here. If only a single one of these studies is valid, then a nonlocal dimension of consciousness exists. In this case, the universe is different than we have supposed, and the game changes. Therefore, *all* these findings must be rejected, or the conventional, cherished views of consciousness as a completely local phenomenon will be subverted. That is why many critics seem to consider skepticism a blood sport and why they pursue a scorched-earth policy in which *all* studies in the field of healing are categorically condemned, often for the flimsiest reasons.

What about the hundreds of studies dealing with nonhuman, inanimate systems? Overall, these studies demonstrate the highest quality of the various categories of intentionality experiments. Many of these studies, such as those done at the Princeton Engineering Anomalies Research lab, have demonstrated astronomically high levels of statistical significance and have been consistently positive across decades.¹⁵ Healing studies involving inanimate systems, therefore, buttress the human studies and are potent evidence supporting the remote effects of healing intentions.

We need to take all the studies in intentionality into consideration because, when taken together, they affirm a principle that is highly prized in science—the concatenation or interconnectedness of things that appear unrelated. If we examine the array of categories analyzed by Jonas and Crawford, we find intentionality effects at the macroscopic level, as in healing studies involving whole persons; at the tissue level, as in studies involving populations of various types of cells; at the microbial level, as in studies involving growth rates of bacteria, yeasts, and fungi; at the molecular level, as in studies involving enzyme kinetics and biochemical reactions; and at the subatomic level, as in random event generators where people attempt to influence the distribution of ones and zeroes. The fact that intentionality effects are demonstrated across this enormous spectrum of nature, from the macroworld to the mesoworld to the microworld, suggests that we have discovered a general, pervasive principle in nature—the ability of intentionality to change the world. This unity of knowledge from disparate domains is called *consilience* by sociobiologist E. O. Wilson.¹⁶

STUDY OF THE THERAPEUTIC EFFECTS OF INTERCESSORY PRAYER

The second, best-known prayer-and-healing experiment is the Harvard Medical School Study of the Therapeutic Effects of Intercessory Prayer (STEP), published in 2006 by physician Herbert Benson et al.¹⁷ The purpose of STEP was to assess the impact of certainty and uncertainty on the possible effectiveness of intercessory prayer in patients undergoing coronary bypass surgery.

Many proponents of prayer and healing have called STEP a “STEP backward” or a

“misSTEP.” The impact of STEP, however, has been significant. Because of its negative outcome, it has become the darling healing experiment of skeptics. Many critics consider “the Harvard study” as the final nail in the coffin of remote healing research. To the great glee of critics of this area, it has had a chilling effect on future research in this field because of the gravitas associated with Harvard-based science. Unfortunately, few critics take the time to ask whether the study was well conceived and whether its conclusions are valid. But there is another side to STEP. It has actually contributed to healing research, because some of the most instructive experiments are those that fail.

Methods

The STEP experiment involved 1,802 patients undergoing coronary-artery bypass surgery in six different US hospitals. They were assigned to three groups: (1) 604 patients were told they might or might not be prayed for, and were (which we’ll call group A), (2) 597 patients were told they might or might not be prayed for, and were not (which we’ll designate as group B, and (3) 601 patients were told they would definitely be prayed for, and were (which we’ll call group C).

Two Catholic groups and one Protestant group were chosen to be intercessors. They prayed for the subjects for two weeks, beginning on the eve or day of surgery. The intercessors were given a prescribed prayer, following which they were permitted to pray their customary way. They were also given the first name and the initial of the last name of those for whom they were praying.

Results

In group A—the 604 patients who were told they might or might not be prayed for, and were—52% had postoperative complications. In group B—the 597 patients who were told they might or might not be prayed for, and were not—51% had postoperative complications, not statistically different from group A. In group C—the 601 who were told they would be prayed for, and were—59% had postoperative complications, a statistically significant difference from groups A and B.

In other words, the group that received prayer and was certain they would do so

had the worst clinical outcome of all, implying that prayer might be harmful.

The response of the media to these findings was enthusiastic and often playful. A banner in *Newsweek* magazine, April 10, 2006, read, “Don’t Pray for Me! Please!”

Analysis

Let’s imagine what the results of the experiment might have been under three conditions: (1) if prayer is effective, (2) if prayer is ineffective, or (3) if prayer is harmful.

1. If prayer is effective, groups A and C should have benefited equally from it, with C having the added benefit of the placebo response owing to the certainty of receiving prayer. Group C, then, should have had the best clinical outcome of the three groups. This was not the case; C had the worst outcome. So “effective prayer” is unable to explain the outcome of STEP.
2. If prayer is ineffective, it should not have exerted any effect on any of the three groups, but group C should have done better because of the certainty of receiving prayer, thus benefiting from the placebo effect. But group C did the worst of all the groups, so “ineffective prayer” is unable to explain the outcome of the experiment.
3. If prayer harms, both A and C should have demonstrated worse outcomes than B (spared prayer), in which case B would have done better than the other two groups. But B responded equally with A. Therefore, harmful or negative prayer cannot explain the results of STEP.

The STEP researchers essentially ignored in their report the possibility that prayer might be harmful, simply saying that the worst outcome in group C “may have been a chance finding.” They were taken to task for this in a scathing rebuke in the *American Heart Journal*.¹⁸ The criticism is appropriate in view of the anthropological evidence that negative beliefs and intentions can be lethal (curses, hexes, spells), as well as the controlled laboratory studies showing that negative intentions can retard or harm living, nonhuman systems.¹⁹(pp165-192)

What other possible explanations are there for STEP’s outcome?

Extraneous Prayer

Randomized controlled studies in prayer in humans acknowledge that patients in both treatment and control groups may pray for themselves and that their loved ones may pray for them as well, but it is assumed that the effects of this extraneous prayer is equally distributed between the intervention and control groups and does not create statistical differences between the two. This assumption may or may not be true, and in any case does not eliminate the problems posed by extraneous prayer in controlled studies. The positive effects of extraneous prayer, if they exist, may diminish the effect size between the two groups, therefore limiting one's ability to detect the effects of assigned prayer in the intervention group. As one of the coauthors of STEP said in a news release from Harvard Medical School, "One caveat [of STEP] is that with so many individuals receiving prayer from friends and family, as well as personal prayer, it may be impossible to disentangle the effects of study prayer from background prayer."²⁰

An analogy would be a pharmaceutical study in which the intervention group is treated with 10 mg of the drug being tested, and the control group with 9 mg. Even if the medication were effective, could the effect be detected?

No one knows how extraneous prayer could be eliminated in human prayer-and-healing studies. It may be impossible to do so, especially in American culture where the great majority of individuals pray routinely when they are well. Trying to eliminate prayer in a control group may be unethical as well, for who has the right to extinguish personal prayer and prayer by loved ones during sickness? In contrast, extraneous prayer can be handily eliminated in nonhuman studies involving animals, plants, or microbes. They presumably do not pray for themselves, and neither do their fellow beings pray for them. In these studies, one often sees profoundly positive effects of healing intentions.^{3(pp189-195)}

Randomization Differences

In May 2008, Ariel et al²¹ examined the demographic differences between the three groups in the Harvard study and found that group C, which had the highest rate of postoperative complications, may have been predisposed to do worse. When

compared with the other two groups, this group had a higher incidence of chronic obstructive pulmonary disease (emphysema and chronic bronchitis), a higher incidence of smoking history, a higher rate of three-vessel coronary bypass surgery, and a lower rate of beta-blocker use prior to surgery, which many experts consider to be cardio-protective during coronary bypass surgery. For a fair trial of prayer, the study should have established a level playing field between all three groups through proper randomization, such that no group was worse off than any other going into the study.

Psychological Factors

The overall design of the study may have created psychological dynamics in groups A and B that could have led to the results that were observed. Patients in groups A and B were told they might or might not be prayed for by the intercessors. Think for a moment what this means. Surveys show that around 80% to 90% of Americans pray regularly when they are well, and it can be assumed that even more pray when they are sick. Faced with the prospect of being denied prayer in the study, the subjects in A and B may therefore have aggressively solicited prayer from their loved ones to make up for the possible withholding of prayer in the experiment, and they may have redoubled their personal prayers for themselves. Thus a paradox may have resulted in which A and B received more prayer—not less—than C, even though this was not the intent of the study. If prayer is effective, this additional, unforeseen, extraneous prayer may have lifted A and B above C in terms of clinical outcomes, accounting for the study's results.

Another possibility is that patients in group C, who knew that many outsiders were praying for them, felt stressed and pressured to do well. Moreover, "It might have made them uncertain, wondering, 'Am I so sick they had to call in their prayer team?'" said cardiologist Charles Bethea, MD, a member of the STEP research team.²² "We found increased amounts of adrenalin, a sign of stress, in the blood of patients who knew strangers were praying for them," said STEP researcher Jeffrey A. Dusek, PhD, associate research director of Harvard's Mind/Body Medical Institute at Massachusetts Gen-

eral Hospital. "It's possible that we inadvertently raised the stress levels of these people."²³

Experimenter Effects

One of the most consistent findings in parapsychological research is that the preexisting beliefs of the experimenter often correlate with the outcome of his/her experiment.^{24,25} This so-called experimenter effect is assumed not to exist in modern clinical research, because it is believed that the subjective attitudes of an experimenter cannot penetrate a controlled study and "push the data around." Yet, any study that attempts to evaluate the effects of prayer should entertain the possibility of experimenter effects. After all, the assumption of an experimenter effect in a healing study is no more radical than the hypothesis being tested—namely that the beliefs and intentions of intercessors might influence clinical outcomes. If the beliefs and intentions of intercessors can change the physical outcomes of an experiment, then why shouldn't the beliefs and intentions of experimenters also affect the results?

Ian Stevenson, the late physician-researcher of the University of Virginia, addressed experimenter effects in his 1989 Presidential Address to the Society for Psychological Research, entitled "Thoughts on the Decline of Major Paranormal Phenomena."²⁶ By "major" he meant "phenomena so gross that we require no statistics for their demonstration." One reason he gave for this decline was the influence of an increasingly pervasive mechanistic and materialistic worldview. As he put it:

... the possibility [exists] that spreading materialism has had an inhibiting effect on paranormal phenomena through paranormal causes. Critics tell us that allegations of their having an adverse effect on the phenomena are mere evasions of the painful truth that they have improved vigilance and tightened controls, so that the alleged phenomena do not occur in the presence of the controls they recommend. This may be true in some instances, and I am far from saying that we can learn nothing from critics. However, we for our part have obtained abundant evidence of the effect of the participants' beliefs on

the delicate balance for or against paranormal effects in experimental situations.²⁷ An atmosphere of completely unqualified belief appears to facilitate and may indeed be essential for the occurrence of paranormal *physical* phenomena,^{28,29} and I think this may be equally true of paranormal *mental* phenomena. *If belief facilitates them, disbelief can block them*, as Schmeidler's experiments showed many years ago [emphasis added].^{30(pp103-110,210-221)}

Psi researcher Gertrude Schmeidler showed that the scores of subjects in card-guessing experiments tended to be high or low according to whether an experimenter was *wishing* the percipient to succeed or fail.^{31,32} Other experiments suggest that unfavorable influences may not reach the level of an overt wish that a percipient fail, says Stevenson, but may remain largely unconscious. Moreover, Stevenson cites experimental evidence that a person need not be physically present to adversely affect an experiment in extrasensory perception.²⁶

Are these findings from psi research relevant to the biological domain? Almost certainly the answer is yes. This author reviewed several studies in nonhumans in which negative thoughts and intentions of experimenters were correlated with negative biological effects in a variety of living systems.^{19(pp165-192)} During the late 19th century, several experiments, by Janet, Richet, and others showed that certain subjects could be put to sleep by suggestions directed at them from a long distance.³³⁻³⁶ Experiments in the 20th century by Vasiliev showed that this effect could operate under conditions of electromagnetic shielding.^{37,38(pp12-17,102-111)} The anthropological literature provides abundant evidence suggesting that negative intentions can harm or even kill individuals at a distance, beyond the range of sensory influences, even when the victim is unaware the attempt is being made.^{19(pp53-133)}

A surprising number of Americans embrace the possibility that thoughts, intentions, or prayers may harm others remotely. A 1994 Gallup poll found that 5% of Americans have prayed for harm to come to others.³⁹ It is likely that the percentage is much higher, since many individuals are reluctant to admit to pollsters

they are attempting to harm other people through prayer.

Could an experimenter effect explain the results of the Harvard prayer study? We cannot say with certainty because we do not know the preexisting attitudes and beliefs of the experimenters. We can say, however, that the Harvard group was not generally known to be advocates of the nonlocal, *interpersonal* effects of intercessory prayer prior to study; rather, the group is widely known and admired as proponents of the *intrapersonal*, mind-body perspective, toward which they have made admirable, even landmark, contributions for decades.

Experimenter effects may not be limited to the immediate investigators but may involve the larger experimental surround. No one knows where experimenter effects begin or end. Could the negative attitudes of skeptical or hostile scientists in the larger Harvard scholarly community have been a factor in group C's negative results? Might the effects of negative thoughts, intentions, wishes, or willing extended even further? More than any other healing study on record, STEP was the subject of media attention for years before it was published. While still on the drawing board, it commanded notice from interested parties in both America and Europe. Several scholars predicted this experiment would decisively settle the controversy about the effectiveness of prayer, and most of the predictions of which I am aware were that prayer would fail. Some critics gleefully anticipated a failed experiment and the demise of such studies. Did these negative beliefs and intentions affect the results? In view of the evidence for nonlocal experimenter effects, this possibility cannot be handily dismissed.

It may be difficult to assess the preexisting beliefs of experimenters even if we try. Some investigators may claim they are neutral toward the remote effects of intentionality and prayer even though they may disbelieve them, because the scientific ideal is openness, not close mindedness. Sometimes prejudice slips out, however, as with a peer reviewer who rejected a paper on the nonlocal manifestations of consciousness with the comment that he would not believe such a thing, even if it were true.^{40,41}

STEP: A Summary

We can make several general statements about STEP.

1. Nowhere in the world is prayer used as in STEP.

People universally say they pray for their loved ones. This suggests that they intimately know them, they pray unconditionally for them, and they love and care for them with empathy and compassion.

In their critique of STEP, researchers Marilyn M. Schlitz and Dean Radin say,

None of the clinical trials [of distant healing intention] has made use of what scientists call 'ecological validity.' This means the trials were not designed to model what happens in real life, where people often know the person for whom they are praying and with whom they have a meaningful relationship. In the Harvard Study, for example, prayer groups were instructed for the sake of standardization to use a prescribed prayer that was different from what those who prayed used in their normal practice. So the Harvard study did not really test what the healers claimed works for them. In addition, in most of the clinical studies, the investigators were tightly focused on medical outcomes, and hardly any attention was paid to the inner experiences of the healers and patients.⁴²

2. Patients in STEP were not known to the intercessors. Neither were all the subjects offered unconditional prayer. Two of the three groups were essentially told, "We may or may not pray for you." The perceptions of the subjects could hardly have been those of unconditional love and caring. To grasp the significance of uncertainty of prayer, imagine going to the bedside of a loved one the evening prior to cardiac surgery and saying, "I have not decided whether or not I am going to pray for you."
3. People do not ordinarily pray scripted prayers in real life but pray from the heart in ways that vary according to their individual temperament, personality, and spiritual beliefs. Some pray for specific outcomes, others pray in

an open-ended, nonspecific way—"they will be done" or "may the best outcome prevail." Scripted prayers degrade the "ecological validity" of real-life prayer.

4. Ritual and context help strengthen the emotional bond in real life between intercessors and subjects (community prayer, prayer in religious settings, etc) We are not told about the context in which STEP prayers were offered.
5. Strangely, the study could not generate a placebo effect, suggesting that factors were afoot in the study that were not taken into account by the research team.
6. Although it is the largest and most expensive prayer study to date, STEP is not the most rigorous and scientific. Several other studies appear much more thoughtful, such as the strongly positive study of Achterberg that utilized Native Hawaiian healers, which we shall examine shortly.^{14,43,44} Although published just prior to STEP, this positive study generated almost no media attention, illustrating the media's preference for controversy and bad news.

The most important criticism of the Harvard prayer study is that prayer was employed in ways that simply do not occur in ordinary life. "Prayer in the wild" in "free-range humans" does not resemble STEP prayer. In fairness, this criticism applies not just to STEP, but to nearly all randomized controlled clinical trials of prayer in humans as well.

Large randomized controlled clinic trials of prayer in humans contain so many pitfalls that even the most assiduous researchers may not be able to anticipate them all. This does not mean that this type of trial should be abandoned, because research methodologies in any young growing field in medical research generally improve with time. And some of the more carefully done controlled trials have produced positive results. But perhaps it's time to focus on healing research in humans in ways that preserve the ecological validity of prayer, even though these methodologies depart from the cherished randomized double-blind protocol. As we'll now see, some researchers have begun to do exactly this.

THE ACHTERBERG fMRI STUDY

Researcher Jeanne Achterberg, who is well known for her decades-long research in imagery, visualization, and healing intentions, moved to the Big Island of Hawaii to investigate healing.⁴³ She spent two years integrating with the community of healers, who accepted her and shared their methods. After gaining their trust, she and her colleagues recruited 11 healers. Each was asked to select a person they had worked with previously with distant intentionality, and with whom they felt an empathic, compassionate bond. The healers were not casually interested in healing; they had pursued their healing tradition an average of 23 years. They described their healing efforts variously—prayer, sending energy or good intentions, or wishing for the subject the highest good. Each recipient was placed in a functional magnetic resonance imaging (fMRI) scanner and was isolated from all forms of sensory contact with the healer. The healers sent forms of distant intentionality related to their own healing practices at two-minute random intervals that could not be anticipated by the recipient. Significant differences between the experimental (send) and control (no send) conditions were found; there was less than approximately one chance in 10,000 that the results could be explained by chance happenings ($P = .000127$). The areas of the brain that were activated during the send periods included the anterior and middle cingulate areas, the precuneus, and frontal areas. This study suggests that remote, compassionate, healing intentions can exert measurable effects on the recipient, and that an empathic connection between the healer and the recipient is a vital part of the process.

Strictly speaking, this is not a healing study because no one was sick. It can be considered a healing analogue, however, because the healers were performing what they usually do during healing rituals.

CONSIDERATIONS FOR FUTURE RESEARCH

What can we learn from these studies? Where do we go from here? What should we do differently in future experiments? I have several suggestions.

1. *Experiments involving prayer should replicate, not subvert, how prayer is employed in the daily lives of ordinary people. Therefore, it is*

time to question whether the randomized double-blind protocol favored in conventional clinical research is adequate for healing experiments.

Because all double-blind prayer experiments employ the uncertainty of receiving prayer, all double-blind protocols distort real-life prayer. The double-blind protocol, therefore, while useful in other areas of medical research, is not ideal for assessing intercessory prayer.

Obsessive reliance on double-blind protocols to test healing intentions may reflect what researcher Edward F. Kelly of the University of Virginia calls "methodolatry"—blind worship of a particular method of investigation. Kelly states,

Laboratory research using random samples of subjects, control groups, and statistical modes of data analysis can be wonderfully useful, but obsession with this as the only valid means of acquiring new knowledge readily degenerates into 'methodolatry,' the methodological face of scientism . . . The experimental literature itself is replete with examples of supposedly 'rigorous' laboratory studies which were in fact performed under conditions that guaranteed their failure from the outset.^{45(ppxxvii-xxix)}

Inserting uncertainty of receiving healing intentions or prayer erodes trust between healer and healee, and trust is considered crucial in real-life prayer and healing. As physicist Russell Targ and healer Jane Kutra state, "Rapport [is] . . . paramount [in healing] . . . Commonality of purpose and mutual trust are essential prerequisites . . . such agreement and coherence among individuals . . . can be attained whenever people surrender their individual identities and join their minds together, focusing their attention on creating a common goal . . . the trust and rapport can then be quickly achieved."^{46(pp81,82)}

A more appropriate experimental approach may be that of Achterberg et al,⁴³ which we've examined. This experiment maximized the key features of intercessory prayer: trust, rapport, empathy, compassion, and unconditionality of healing intent. This true-to-life approach is more likely to capture whatever effects of prayer and intentionality may exist.

There is no need to apologize for departing from a double-blind controlled approach to prayer. Where healing is concerned, one should adapt the experimental methodology to the technique and not vice versa, as is often done. This is not only common sense, but good science as well.

2. *Single case reports of single individuals' responses to healing efforts should be encouraged.*

It may not be accidental that the most dramatic responses to prayer are reported not in randomized controlled trials but in instances in which single individuals receive prayer from family, loved ones, the faith community to which they belong, or from healers whom they know and trust. These individualized settings maximize trust, unconditionality, love, empathy, and compassion on which healing depends, whereas controlled trials do not.

When dramatic responses occur in conventional randomized clinical trials involving pharmaceutical treatments, they are usually dismissed as "statistical outliers" and are ignored. In healing experiments, we need to treat them not as an inconvenience or embarrassment but as a possibly meaningful response to healing efforts, as emphasized by authors Hirshberg and Barasch in *Remarkable Recovery*, an admirable review of the field of spontaneous healing.⁴⁷

3. *In view of the evidence for experimenter effects, the preexisting beliefs of prayer experimenters should be ascertained and recorded as part of the study.*

The longitudinal assessment of this factor, over many decades and scores of studies, would help clarify whether or not the experimenter effect applies to healing-and-prayer studies as it does in studies in other areas, as we have seen.

4. *Studies involving healing intentions should not be conducted in the full glare of the media.*

Healing studies are best done out of the way, with a minimal amount of fanfare and public attention. This will minimize any influence of extraneous intentions—experimenter effects—from both cordial and hostile sources.

5. *Careful consideration should be given to the selection of intercessors or healers.*

We have made only halting efforts at gauging the skills of healers, although the fields of therapeutic touch, healing touch,

and Reiki have taken steps in this direction through certification programs.

Some of the most successful studies have employed healers with years or decades of experience and who considered themselves professional healers.^{43,48} A competing approach seeks to democratize healing by using relatively unskilled healers/intercessors. This reflects a desire to show that healing abilities are widespread or universal, present in some degree in perhaps everyone. Democratizing healing abilities is a noble effort, but the evidence so far suggests that this often results in marginal or nonsignificant outcomes.

Prodigies exist in every area of human endeavor, such as athletics, music, mathematics, and art. Throughout history they have existed in healing as well. Selecting seasoned, experienced, veteran healers should not be seen as an exercise in elitism but as an effort to provide an experiment with the optimal chance of success. And if the use of veteran healers is considered elitist, it is a "democratic elitism" to which all are invited through training and experience.

If we wish to know whether humans can run a four-minute mile, we test exceptional athletes to find out. To determine whether prayer is effective, why not test the most experienced, seasoned intercessors or healers? The strongly positive Achterberg study⁴³ and the positive study in advanced AIDS by Sicher, Targ, and colleagues⁴⁸ illustrate this principle.

6. *The actual techniques of healing and prayer deserve attention.*

According to a Buddhist saying, "When the wrong person uses the right method, the right method works in the wrong way." In healing, we want the right person to use the right method. The right person may be a veteran healer, as mentioned, but what is the right method?

Many researchers consider healing to be a black box and pay little or no attention to the techniques that are used. This is akin to regarding all pharmaceuticals as "drugs," without distinguishing between antibiotics, antiarrhythmics, anti-inflammatories, chemotherapeutic agents, and so on. Want to get better? Take a drug; don't ask what it is. Our failure to differentiate healing methodologies may be equally naive.

Our efforts to distinguish the efficacy of different healing techniques are compro-

mised because many studies use a variety of healers simultaneously. How would we know which one worked and which ones did not?

Yet we must be careful when using a homogenous group of healers or intercessors. This has led to a charge of religious favoritism toward some studies, including the celebrated 1988 Byrd study, in which only born-again Christians were recruited as intercessors.¹⁰ Religious agendas, whether real or implied, are a guarantee for criticism of this field.

Thus far, evidence suggests that religious affiliation in prayer-and-healing studies does not greatly matter. Successful studies have used secular healers, or spiritual, but not religious healers, or devotees of a variety of faiths. Thus far, no particular faith tradition appears to have cornered the market on effective healing.

In a world aflame with religious zeal and narrow fundamentalism, healing researchers should not add to the epidemic of religious intolerance and bigotry. This caution may seem unnecessary, but I believe otherwise. An example involved a physician friend of mine who is a sincere proponent of religious-based healing at a leading medical school. He suggested to me that we need a prayer-and-healing contest. Healers of various faith traditions would be invited to participate in a uniform healing experiment, and their results would be quantified and compared. This would be a "prayeroff," rather like a playoff in professional sports. In the end, the healers of a single religious tradition would be crowned the winner. He called this the "Elijah Test," after the Old Testament prophet who trounced a group of pagan priests in a head-to-head contest of sorts (1 Kings 18). Although I initially thought my friend's proposal was a joke, he was quite serious. "Why do you want to do this?" I asked. "I just want to bring praise to the Lord," he replied with incandescent enthusiasm. He had no doubt that his own religion would triumph. He seemed not to care that his proposal would evoke divisiveness and enmity between faiths. I am happy that a prayeroff has not been conducted, and I hope it never is. In healing, we should not be promoting winners and losers.

7. *We should determine whether certain conditions are more susceptible to healing than others.*

In conventional medicine, appendicitis is easier to cure than brain tumors, and some brain tumors are easier to cure than others. Is this true where healing intentions are concerned? Are some illnesses more responsive to healing than others? We don't yet know, but we should be prepared for surprises. It may turn out that some serious illnesses are more susceptible to healing intentions than mild ailments are.

Many years ago I had a conversation about this issue with physician-researcher Elisabeth Targ when she and her research team were designing their landmark healing study. I had just learned that she had decided to use subjects with advanced AIDS for the experiment. I called her and said something like, "Elisabeth, why on earth did you pick advanced AIDS? There's no good *conventional* treatment for this problem (this was prior to the use of multiple antiretrovirals). Why do you think *healing* is going to work? Why not pick a milder illness, like the flu? I'm afraid you're going to give healing a bad name!" She laughed heartily. "Larry," she chided, "I thought you believed in healing!" She patiently explained her reasons. "If we can make a difference in advanced AIDS, skeptics can't say that healing did nothing because the illness would have got better anyway. Besides, healers like a challenge. They'd much rather work on patients with a problem like AIDS than someone with the flu."

She was right. Her study found that the patients with advanced AIDS who were extended healing intentions did better on several counts. They had a lower incidence of AIDS-associated illnesses that kill AIDS patients, such as pneumocystis pneumonia, encephalitis, and so on. They had a lower rate of hospitalization. If they were hospitalized, their stays were briefer. They had a higher quality of life score than the controls, and there was no correlation between their outcomes and whether or not they believed they were receiving healing intentions.⁴⁸

8. *We should determine whether specific healing techniques are compatible or incompatible with conventional drugs and surgical procedures.*

Some healers say there's never a conflict with conventional therapies, whereas others say incompatibility is always a prob-

lem. Experiments using single healing methods would help answer this question.

9. *We should seek to understand the interconnections between healing, prayer, and meditation.*

Several studies have compared experienced meditators with nonmeditators in performing certain psi tasks. As psi researcher Dean Radin says, "The meditators almost always perform better, usually significantly better . . . These abilities have something to do with the subtle aspects of mind . . . The phenomena seem to bubble up from our unconscious, so the more that we are aware of what's going on in our unconscious, the better people are likely to do."⁴⁹

Do skilled meditators make better healers? As far as I know, there have been no healing studies that have specifically used only skilled meditators. There needs to be.

10. *What is the difference between prayer and focused intentionality?*

When patients respond to intercession, what is responsible for their response—intercessory prayer itself, or focused attention such as one sees in skilled meditators? And is the prayer mediated by a higher power, or is there a direct, mind-to-matter interaction, which psi researchers called psychokinesis? No one knows for sure.

Most religious-based healers insist that the effects of prayer are mediated by a higher power. Yet not all religions are theistic. The classic example is some forms of Buddhism, in which healers pray not to a specific deity but to the universe at large. What mediates Buddhist healing prayer?

I confess that I cannot conceive of an experiment that would tease apart this question. After all, there are no "God meters" in science. Perhaps this is an indication that we ought to leave this question open and encourage people simply to pray in the way that feels most genuine and authentic to them without trying to prove "what did it." After all, the person who is healed is more concerned with the *fact* of her healing than *how* it happened.

11. *More attention should be paid to a tiered and rotating experimental design in prayer-and-healing studies.*

By a tiered design is meant a "backup" group of intercessors who simply pray for a successful outcome of the overall study, in addition to a group of intercessors who pray specifically for the subjects.

The successful triple-blind study of Cha et al,⁵⁰ involving pregnancy rates in women undergoing in vitro fertilization and embryo transfer, employed this method.⁵⁰ The MANTRA II study by Krucoff et al⁵¹ at Duke University Medical Center also added a tiered feature at a certain point in the experiment. Although the overall study was not statistically significant, analysis revealed that significant results were achieved beginning with the addition of the tiered feature.

By a rotating design is meant that prayer assignments are rotated during the course of the experiment, so that by its conclusion all patients have been subjected to the prayers and healing intentions of all the intercessors or healers. This helps minimize any difference in the skills of healers by ensuring that efforts of healers who may be uniquely gifted are conveyed to all the patients in the treatment group, not just to a few. Targ and her colleagues employed this method in a positive study examining healing intentions in patients with advanced AIDS, as we've seen.⁴⁸

12. *Close attention should be paid to the duration and frequency of the healing therapy that is used.*

These factors vary so widely in experiments to date that comparison between studies is often difficult. For example, prayer duration has varied from only a few minutes⁵² to hours.⁴⁸ One "minutes-only" prayer study involving patients receiving renal dialysis actually prohibited the intercessors from praying more than just a few minutes a day, whereas the Targ et al study in patients with advanced AIDS required healers to extend healing intentions for hours a day. The Targ study was successful, while the "minutes-only" study was not.

This does not necessarily mean, however, that more prayer and healing intentions are always better. There does not appear to be a dose-response curve in healing, like we see with medications. Almost certainly we will find that it is not just quantitative factors such as the frequency and duration of healing intentions that matter, but also qualitative factors—the degree of genuineness, sincerity, compassion, empathy, and love that are offered. For my part, if I were sick I would prefer the brief prayers of a single empathic, loving individual to those of a hundred people who were bored stiff.

13. *We should acknowledge that healing research may not be for everyone.*

In conventional science, it is believed that any researcher may investigate any subject, provided he or she has the requisite expertise. But we've noted that the conscious and unconscious beliefs and intentions of a researcher may influence the outcome of a carefully designed experiment. If intentions and beliefs matter, it is best that those who are hostile to the possibility of remote healing bypass this field of investigation, because their negative beliefs may poison their efforts.

Barbara McClintock, the Nobel geneticist, expressed a similar idea. She believed that her success depended in large measure on what she called a "feeling for the organism."⁵³ Those who have no "feeling for the organism" in healing should cede this research area to those who do.

14. *Healing researchers should familiarize themselves with the accomplishments of parapsychology.*

Research involving human intentionality has been done in the field of parapsychology for decades, including hundreds of careful studies in a variety of living systems.^{12(ppxxv-xix),13} However, prayer-and-healing researchers generally appear oblivious to this work. For example, one can read the literature review sections of healing papers and see no mention of prior intentionality studies in parapsychology. To compound this situation, most healing researchers seem not to have learned very much from prior studies *in their own field*. Protocols meander in every direction without incorporating features of earlier studies that have been successful. Some studies have even duplicated features of prior *failed* studies.

This willful ignorance is dreadful, because psi researchers have dealt for decades with issues that are critical in healing research. Decline phenomena and experimenter effects are examples. Moreover, theory development and hypothesis formation in the psi literature is leagues ahead of the situation in healing research in medicine.

No healing researcher should venture into this area without familiarizing him/herself with the basic literature in parapsychology. This is no longer a daunting task. Several excellent books are now available, among which are

- Dean Radin, *The Conscious Universe*⁵⁴ and *Entangled Minds*,⁵⁵ as mentioned
- Damien Broderick, *Outside the Gates of Science: Why It's Time for the Paranormal to Come In from the Cold*⁵⁶
- Elizabeth Lloyd Mayer, *Extraordinary Knowing: Science, Skepticism, and the Inexplicable Powers of the Human Mind*⁵⁷
- Robert G. Jahn and Brenda J. Dunne, *Margins of Reality: The Role of Consciousness in the Physical World*⁵⁸
- Stephan A. Schwartz, *Opening to the Infinite: The Art and Science of Nonlocal Awareness*⁵⁹
- Daniel J. Benor, *Healing Research*¹³
- Wayne B. Jonas and Cindy C. Crawford, *Healing, Intention and Energy Medicine*¹²
- Edward F. Kelly et al, *Irreducible Mind: Toward a Psychology for the 21st Century*⁴⁵
- Cardena Etzel, Lynn Steven Jay, Krippner Stanley, eds. *Varieties of Anomalous Experience: Examining the Scientific Evidence*⁶⁰
- Richard Broughton, *Parapsychology: The Controversial Science*⁶¹
- Russell Targ, *Do You See What I See?*⁶²
- Russell Targ and Jane Katra, *Miracles of Mind: Exploring Non-local Consciousness and Spiritual Healing*⁴⁶
- Robert M. Schoch and Logan Yonavjak, *The Parapsychology Revolution: A Concise Anthology of Paranormal and Psychological Research*⁶³

Every healing research team should include one or more coinvestigator, advisor, or consultant with experience in parapsychology research. Not doing so is like conducting brain surgery without a neurosurgeon.

15. *We should emphasize more bench science and proof-of-principle studies.*

There are a great many advantages to simple healing studies involving not humans but animals, tissues, cells, biochemical reactions, plants, or microbes. Some of the issues we've examined—whether skilled healers are preferable to laypersons, whether some healing methods are more effective than others, or questions about the duration and frequency of healing intentions—are more easily approached in nonhumans.

The mother of all questions is whether the healing effect is real or whether we're fooling ourselves. I believe this question has been answered in the affirmative, and

that the most decisive proof is not in human studies but in nonhuman ones.

In order to further answer these pressing, fundamental questions, Jonas and Crawford have wisely suggested that we need to develop a biological model for healing. They say, "Laboratory models allow for rigorous and controlled studies to test mechanisms and theories of healing. . . . A bioREG (biological random event generator) is one focus for development. Other models might include a cell biology model of cancer and a neuroscience model examining the neurological correlates of healing and consciousness technologies such as functional MRI and PET, MEG or qEEG."^{12(ppxxv-xix)}

A promising example along these lines is a recent study examining the effects of therapeutic touch on the proliferation of normal human cells in culture, compared with sham and no treatment. These researchers found that therapeutic touch administered twice a week in 10-minute intervals for two weeks significantly stimulated proliferation of fibroblasts, tenocytes, and osteoblasts in culture ($P = .04, .01, \text{ and } .01$, respectively) compared with untreated controls.⁶⁴

16. *The goal of a single "killer study" in healing, which would sweep all opposition before it, should be abandoned, because such a study is unnecessary.*

As historian Thomas S. Kuhn maintained in his landmark book *The Structure of Scientific Revolutions*, paradigm shifts in science usually occur as a result of an increasing number of exceptions to prevailing views, not because of a single experiment that suddenly demolishes conventional thinking.⁶⁵ This is already happening in healing research, as more data points are being added to the healing canon.

17. *Experimenters should strive to conduct their experiments in surroundings that are cordial to the idea and possibility of healing.*

It may matter greatly *where* one does healing research. For example, the Big Island of Hawaii, where Achterberg, as we've seen, did her positive fMRI study involving healers, is often called the Healing Island. There, healing seems to be in the air, assumed to be a part of everyday life. In contrast, in many academic settings remote healing is considered an embarrassment to the institution—heretical, blasphemous, antiscientific, implausible, impossible, or threatening. Inimical

situations such as these can suffocate the best efforts of healers and perhaps prevent the effects that experimenters are investigating.

Psychiatrist Ian Stevenson, of the University of Virginia, mentioned above, was an authority on children who claim to remember past lives. He and his colleagues investigated thousands of these cases. They found that few of them originate in the United States. Stevenson attributed this largely to the inhibiting effects of our materialistic mindset. He said, "If I were advising a young scientist entering psychical research today, I would reverse Horace Greeley's advice to young Americans of the mid-nineteenth century and say 'Go East, young man'²⁶—for that is where the cultural atmosphere is friendliest to such phenomenon. I'm not suggesting that healing studies literally be conducted in the East, but in surroundings that are at least cordial to the possibility of healing.

18. *We should consider a temporary moratorium on healing studies.*

At the risk of sounding censorious, I suggest a temporary halt to prayer-and-healing studies. Currently, researchers seem to wander almost without direction in this field, with little awareness of what has worked and what hasn't. A make-it-up-as-you-go-along philosophy often seems to prevail. A time-out is needed to assess where the field has come from and where it is headed. All healing studies need to be critically assessed, analyzed, and dissected. Which factors correlate with success and which with failure? Of the many hypotheses that have been advanced to account for remote healing, which hold promise?

We need a Healing Summit that would bring together key healing researchers to confront these questions. Healers should also be a part of this discussion. Too often they are marginalized and their opinions ignored in favor of the intellectual gyrations of investigators who may be clueless about the inner dimensions of healing that are important to the healers themselves.

19. *Healing research should be conducted with respect.*

Before she died in 2002, Elisabeth Targ told me, "When I go into my lab to do a healing experiment, I feel as if I am walking on sacred ground." She compared her experiments to invitations. "I set up the experiment as if I'm opening a window to

the Absolute. If She enters, the experiment works. If not, it's back to the drawing board to figure out how to make the experiment more inviting the next time." Elisabeth's healing experiments were all about invitation, not manipulation or control. She knew that the words *healing*, *wholeness*, and *holy* are related. Elisabeth believed it is not enough for healing researchers to be clever; one's inner life is also important. I agree completely. In fact, I have never known a healing researcher who made a significant contribution to the field who did not have a rich inner life and who was not following a spiritual path.

We will never compel or bludgeon healing to yield its secrets. A light touch is required—Elisabeth's gentle, respectful invitation, by which one approaches the world like a lover.

20. *We should shed our timidity about what has been accomplished in healing research.*

Healing research hardly existed 40 years ago. If someone had told me when I graduated from medical school that I would see studies in remote healing conducted at some of the finest medical schools in the world—Harvard; Columbia; Duke; UC; San Francisco; and others—I'd have considered them lunatic. We should be proud of these achievements. But that is possible only if we know our history—what studies have been done, what they showed, why they worked, or why they didn't.

People working in this field are what medical futurist Leland Kaiser calls "edge runners"—risk takers who are out front in controversial territory.⁶⁶ But edge runners can get discouraged, because they are always swimming upstream.

I recently I had a conversation with a healing researcher who was having a really bad day. She lamented, "We have learned almost nothing from all these experiments. It's as if we are back where we started." So I had the opportunity to talk her down from that ledge. I told her that, in my opinion, we have decisively demonstrated that consciousness operates nonlocally to change the state of the physical world. We've learned that these effects occur throughout nature, including in the context of health and illness. History, I said, will record this as one of the most remarkable contributions in human knowledge, perhaps *the* most remarkable. And I reminded her that she was partly

responsible for this breakthrough. She said, "Really?" and we shared a laugh.

But we have to be realistic. Those of us who work in this field will continue to face skepticism, which is as it should be, because science cannot progress without it. But we will also continue to meet willful ignorance, prejudice, and bigotry. The best response is simply to do our work patiently and take the long view. Dean Radin has described this situation accurately. In a fascinating review of the scientific evidence for time-reversed effects, he offers predictions that apply also to healing research, saying, "These implications, of course, are heresies of the first order. But I believe that if the scientific evidence continues to compound, then the accusation of heresy is an inescapable conclusion that we will eventually have to face. I also believe that the implications of all this are sufficiently remote from engrained ways of thinking that the first reaction to this work will be confidence that it is wrong. The second reaction will be horror that it may be right. The third will be reassurance that it is obvious."⁶⁷

In the end, it is unclear how much we *can* know about the abundant mysteries of healing and the nature of human consciousness. William James, the father of American psychology, said late in life, "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."⁶⁸

These mysteries are certain to exhaust us before we exhaust them. But this is no concession or admission of defeat. In the human drama, it is the journey, not the destination, that is most important.

TWO HEALERS

In our enthusiasm for healing, we ought always to bear in mind that, in the end, all the attempts of healers to eradicate illness fail. Everyone dies; so far the statistics are quite impressive. This is a blessing for human life in general, because if all the

prayers for the eradication of illness were answered, few would die and the earth would have become overpopulated and rendered unfit for habitation long ago.

But in another sense, healing never fails because the very fact that remote intentionality exists reminds us that our consciousness is nonlocal or infinite in space and time. This means that immortality is our birthright. It is part of our original equipment. We do not have to acquire it. It comes factory installed.

Two remarkable women reminded me of this fact, both of whom were extremely influential in advancing the art and science of healing.

One was Charlotte McGuire. Many of her colleagues remember Charlotte's guiding principle, "Love is the essence of healing."⁶⁹ At the height of her nursing career, "Charlie" was vice president and director of patient care for 19 hospitals in Texas. She was corporate America. However, in 1981 she had the guts to say, "I quit," and she founded the American Holistic Nurses Association. This happened at the gentle nudging of Dr. C. Norman Shealy, who was one of the founders of the American Holistic Medical Association. Today the AHNA has over 4,000 members and is a champion for healing in nursing worldwide. Holistic nursing has matured so greatly that it has recently been officially recognized as a subspecialty within nursing by the American Nurses Association.

On April 22, 2008, my wife Barbara and I journeyed to Charlie's Buffalo Woman Ranch near Dove Creek, Colorado, to see her for the last time. Barbie was a founding member of the AHNA and one of Charlie's earliest collaborators. Charlie was dying of metastatic breast cancer and was in her final days. She was bald, battered, and beautiful. We knew this was our last time to see her, so we didn't waste time with idle chatter and neither did she. Barbie asked her, "Charlie, have you seen the other side?" She nodded yes. "What's it like?" She said softly with a smile, "It's beautiful. So beautiful!" She died a few days later in perfect peace.

I wish also to honor the late physician Elisabeth Targ, whom I have mentioned many times. Elisabeth was one of the great geniuses of healing research. She had the distinction of being able to do something many scientists simply are incapable of—she could produce a positive study in remote

healing, not least because she was herself a healer and knew healing from the inside out. Shortly before her death, she said her fondest wish was to return as "the Virgin Mary's assistant to help people love and heal."⁷⁰

It is to the memory of these two extraordinary women—Charlotte McGuire, RN, MS (1942-2008) and Elisabeth Targ, MD (1961-2002)—that I dedicate this essay. May our efforts be worthy of their memory.

—Larry Dossey, MD
Executive Editor

REFERENCES

1. Eddington AS. Quoted in: Wilber K. *Quantum Questions: The Mystical Writings of the World's Great Physicists*. Boston, Mass: Shambhala; 1984: back cover quotation.
2. Maxwell W. Quoted in: Streitfield D. Maxwell the reader. *Washington Post*. October 26, 1997:X15.
3. Dossey L. *Healing Words: The Power of Prayer and the Practice of Medicine*. San Francisco, Calif: HarperSanFrancisco; 1993.
4. Walden M, reviewer. *Raising Power*. 1995; 2(1). Review of: Dossey L. *Healing Words*.
5. Jowett B. Quoted in: Smith LP *Unforgotten Years*. Boston, Mass: Little, Brown and Company; 1939:169.
6. Einstein E. Attributed. Wikiquote. Available at: http://en.wikiquote.org/wiki/Albert_Einstein. Accessed May 21, 2008.
7. Galton F. Statistical inquiries into the efficacy of prayer. *Fortn Rev*. 1872;12:125-135.
8. Polkinghorne J. *Science and Providence: God's Interactions with the World*. Boston, Mass: New Science Library/Shambhala; 1989:75.
9. Randall WS. *George Washington: A Life*. New York, NY: Holt; 1998.
10. Byrd R. Positive therapeutic effects of intercessory prayer in a coronary care unit population. *South Med J*. 1988;81:826-829.
11. Dossey L. Distance healing: evidence. In: Schoch RM, Yonavjak L, eds. *The Parapsychology Revolution: A Concise Anthology of Paranormal and Psychic Research*. New York, NY: Tarcher/Penguin; 2008.
12. Jonas WB, Crawford CC. *Healing, Intention and Energy Medicine*. New York, NY: Churchill Livingstone; 2003.
13. Benor DJ. *Healing Research*. Vol 1. Southfield, Mich: Vision; 2002.
14. Dossey L, Hufford DB. Are prayer experiments legitimate? Twenty criticisms *Explore (NY)*. 2005;1:109-117.
15. The pertinence of the Princeton Engineering Anomalies Res (PEAR) laboratory to the pursuit of global health. *Explore (NY)*.

Special issue. 2007;3(special issue):191-345.

16. Wilson EO. *Consilience: The Unity of Knowledge*. New York, NY: Knopf; 1998.
17. Benson H, Dusek JA, Sherwood JB, et al. Study of the Therapeutic Effects of Intercessory Prayer (STEP) in cardiac bypass patients: a multicenter randomized trial of uncertainty and certainty of receiving intercessory prayer. *Am Heart J*. 2006;151:934-942.
18. Krucoff MW, Crater SW, Lee KL. From efficacy to safety concerns: a STEP forward or a step back for clinical research and intercessory prayer?: the Study of Therapeutic Effects of Intercessory Prayer (STEP). *Am Heart J*. 2006;151:762-764.
19. Dossey L. *Be Careful What You Pray For*. San Francisco, Calif: HarperSanFrancisco; 1997.
20. Jain M. Quoted in: Largest study of third-party prayer suggests such prayer not effective in reducing complications following heart surgery. News release, Harvard Medical School Office of Public Affairs. March 31, 2006. Available at: http://web.med.harvard.edu/sites/RELEASES/html/3_31STEP.html. Accessed June 5, 2008.
21. Ariel H, Dvorkin L, Steinman Y, et al. Intercessory prayer: a delicate celestial orchestration between spiritual and physical worlds [letter to the editor]. *J Altern Complement Med*. 2008;14:351-352.
22. Betha C. Quoted in: Cromie WJ. Prayers don't help surgery patients. *Harvard University Gazette*. April 6, 2006. Available at: <http://www.hno.harvard.edu/gazette/2006/04.06/05-prayer.html>. Accessed June 5, 2008.
23. Dusek JA. Quoted in: Cromie WJ. Prayers don't help surgery patients. *Harvard University Gazette*. April 6, 2006. Available at: <http://www.hno.harvard.edu/gazette/2006/04.06/05-prayer.html>. Accessed June 5, 2008.
24. Palmer J. Confronting the experimenter effect. In: Coly L, McMahon JDS, eds. *Psi Research Methodology: A Re-examination: Proceedings of an International Conference held in Chapel Hill, North Carolina, October 29-30, 1988*. New York, NY: Parapsychology Foundation; 1993:44-64.
25. Wiseman R, Schlitz M. Experimenter effects and the remote detection of staring. *J Parapsychol*. 1997;61:197-208.
26. Stevenson I. Thoughts on the decline of major paranormal phenomena. Presidential Address to the Society for Psychic Research, 1989. *Proc Soc Psychic Res*. 1990;57: 149-162.
27. White RA. The influence of persons other than the experimenter on the subject's scores in psi experiments. *J Soc Psychic Res*. 1976;70:133-166.
28. Batchelder KJ. Report on a case of table levitation and associated phenomena. *J Soc Psychic Res*. 1966;43:339-356.

29. Owen IM, Sparrow M. *Conjuring Up Philip: An Adventure into Psychokinesis*. New York, NY: Harper and Row; 1976.
30. Schmeidler GR. Predicting good and bad scores in a clairvoyance experiment: a preliminary report. *J Soc Psychic Res*. 1943;37
31. Schmeidler GR. Evidence for two kinds of telepathy. *Int J Parapsychol*. 1961;3:5-48.
32. Schmeidler GR. Are there two kinds of telepathy? *J Soc Psychic Res*. 1961;55:87-97.
33. Adams N. Remarkable mesmeric phenomena. *The Zoist*. 1849-1850;7:79-80.
34. Janet P. Note sur quelques phénomènes de somnambulisme. *Rev Philosoph France Etrang*. 1886;21:190-198.
35. Janet P. Deuxième note sur le sommeil provoqué a distance et la suggestion mentale pendant l'état somnambulique. *Rev Philosoph France Etrang*. 1886;22:212-223.
36. Richet C. Un fait de somnambulisme à distance. *Rev Philosoph France Etrang*. 1886;21:99-200.
37. Vasiliev LL. *Experiments in Distant Influence*. New York, NY: E P Dutton and Co; 1976.
38. Dossey L. Hypnosis: a window into the soul of healing. *Altern Ther Health Med*. 2000; 6(2).
39. "The Way We Live." *Life* magazine, March 1994:54-63.
40. Targ R, Puthoff H. *Mind-Reach. Scientists Look at Psychic Ability*. New York, NY: Delta; 1977: 169.
41. Scanning the issue [editorial]. *Proc IEEE*. March 1976;LXIV(3):291.
42. Schlitz MM, Radin D. *Measuring the Immeasurable*. Simon T, ed. Boulder, Colo: Sounds True; 2008:387-404.
43. Achterberg J, Cooke K, Richards T, Standish L, Kozak L, Lake J. Evidence for correlations between distant intentionality and brain function in recipients: a functional magnetic resonance imaging analysis. *J Altern Complement Med*. 2005;11:965-971.
44. Dossey L. Spirituality, prayer, and medicine; what is the fuss really about? *Virtual Mentor* [serial online]. 2005; 7(5). Available at: <http://virtualmentor.ama-assn.org/2005/05/oped2-0505.html>. Accessed October 15, 2008.
45. Kelly EF, Kelly EW, Crabtree A, Gauld A, Grosso M, Greyson B. *Irreducible Mind: Toward a Psychology for the 21st Century*. Lanham, Md: Rowman & Littlefield; 2007.
46. Targ R, Katra J. *Miracles of Mind: Exploring Non-local Consciousness and Spiritual Healing*. Novato, Calif: New World Library; 1998:81-82.
47. Hirshberg C, Barasch MI. *Remarkable Recovery: What Extraordinary Healings Tell Us About Getting Well and Staying Well*. New York, NY: Riverhead; 1995.
48. Sicher F, Targ E, Moore D, Smith HS. A randomized double-blind study of the effect of distant healing in a population with advanced AIDS—report of a small-scale study. *West J Med*. 1998;169:356-363.
49. Miller DI. Parapsychology researcher Dean Radin on ESP, spirituality, and how the consciousness of individuals is connected. [SFGate.com](http://www.sfgate.com/cgi-bin/article.cgi?f=/g/a/2008/02/25/findreliq.DTL). February 25, 2008. Available at: <http://www.sfgate.com/cgi-bin/article.cgi?f=/g/a/2008/02/25/findreliq.DTL>. Accessed May 23, 2008.
50. Cha KY, Wirth DP, Lobo R. Does prayer influence the success of in vitro fertilization-embryo transfer? Report of a masked, randomized Trial. *J Reprod Med*. 2001;46:781-787.
51. Krucoff MW, Crater SW, Gallup D, et al. Music, imagery, touch, and prayer as adjuncts to interventional cardiac care: the Monitoring and Actualization of Noetic Trainings (MANTRA II) randomized study. *Lancet*. 2005;366:211-217.
52. Matthews WJ, Conti JM, Sireci SG. The effects of intercessory prayer, positive visualization, and expectancy on the well-being of kidney dialysis patients. *Altern Ther Health Med*. 2001;7:42-52.
53. Keller EF. *A Feeling for the Organism: The Life and Work of Barbara McClintock*. San Francisco, Calif: W H Freeman; 1983.
54. Radin D. *The Conscious Universe*. San Francisco, Calif: HarperSanFrancisco; 1997.
55. Radin D. *Entangled Minds*. New York, NY: Paraview/Simon & Schuster; 2006.
56. Broderick D. *Outside the Gates of Science: Why It's Time for the Paranormal to Come In from the Cold*. New York, NY: Thunder's Mouth Press/Avalon Publishing Group; 2007:175.
57. Mayer EL. *Extraordinary Knowing: Science, Skepticism, and the Inexplicable Powers of the Human Mind*. New York, NY: Bantam/Random House; 2007.
58. Jahn RG, Dunne BJ. *Margins of Reality: The Role of Consciousness in the Physical World*. New York, NY: Harcourt Brace Jovanovich; 1987.
59. Schwartz SA. *Opening to the Infinite: The Art and Science of Nonlocal Awareness*. Buda, Texas: Nemoseen; 2007.
60. Cardeña E, Lynn SJ, Krippner S. *Varieties of Anomalous Experience: Examining the Scientific Evidence*. Washington, DC: American Psychological Association; 2000.
61. Broughton RS. *Parapsychology: The Controversial Science*. New York, NY: Ballantine; 1991.
62. Targ R. *Do You See What I See?* Charlottesville, Va: Hampton Roads Publishing; 2008.
63. Schoch RM, Yonavjak L. *The Parapsychology Revolution: A Concise Anthology of Paranormal and Psychic Research*. New York, NY: Tarcher/Penguin; 2008.
64. Gronowicz GA, Jhaveri A, Clarke LW, Aronow MS, Smith TH. Therapeutic touch stimulates the proliferation of human cells in culture. *J Altern Complement Med*. 2008; 14:233-239.
65. Kuhn TS. *The Structure of Scientific Revolutions*. 3rd ed. Chicago, Ill: University of Chicago Press; 1996.
66. Kaiser L. Spirituality and healthcare. Interview by Bonnie J Horrigan. *Explore (NY)*. 2005;1:48-56.
67. Radin D. Time-reversed human experience: experimental evidence and implications. [boundaryinstitute.org](http://www.boundaryinstitute.org/articles/timereversed.pdf), July 31, 2000. Available at: <http://www.boundaryinstitute.org/articles/timereversed.pdf>. Accessed June 8, 2000.
68. James W. *The Correspondence of William James*. Vol 11. McDermott JJ, Skrupskelis IK, Berkeley E, Burkhardt FH, eds. Charlottesville, Va: University of Virginia Press; 2003:143-144.
69. Nemeth L. Charlie McGuire: "love is the essence of healing." *Beginnings*. Spring 2008: 5-6.
70. Katra J. Obituary of Elisabeth F. Targ. [Findarticles.com](http://findarticles.com). Available at: http://findarticles.com/p/articles/mi_m2320/is_4_66/ai_97754940/pg_1. Accessed May 31, 2008.