# Scientists and Healers: Toward Collaborative Research Partnerships

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In recent years we have witnessed growing interest in the study of healers and healing. Yet because of barriers segregating the professional worlds of scientists and healers, research on this topic has not met its potential. Even the most sympathetic of scientific investigators have failed to treat healers as full research partners, neglecting to take seriously healers' informed perspectives in formulating study questions and in making key decisions regarding assessment and outcomes. Likewise, some of the most gifted healers exhibit antipathy toward scientific research that is uninformed and works at cross purposes with efforts to validate the efficacy of healing and to integrate its practice into conventional medical settings. For this situation to improve, scientists and healers must recognize that each party has critical gaps in knowledge and skills that the other party possesses. Only through true collaborative partnerships can the potential benefits of research on healing be realized.

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It is ironic, perhaps even tragic, how little the healing professions actually understand about healing. We all know that healing is something good, something that we want, for ourselves and for our clients, but no one has ever satisfactorily explained just what it is, how it happens, and how to get there. There could be no more worthy scientific enterprise than finding answers to these fundamental questions about healing. Yet, for all the writing on this topic, both popular and scholarly, there is still considerable confusion.

For one, there is no more misunderstood term in all of complementary and alternative medicine (CAM) than "healing." To some, healing is an intervention, as in Therapeutic Touch or Reiki. Healing is something done by healers–a therapeutic modality delivered by a practitioner to a client. To others, healing is an outcome, such as recovery from illness or curing of a disease. As a result of treatment, whether conventional or alternative, we hope to experience a healing. To still others, healing is a process–for example, Antonovsky's concept of salutogenesis.[1] When the pathogenic process is halted, we then ideally may begin healing–moving from a state of disease to a state of renewed health.

In some unfortunate pieces of writing, healing is all three of these things at the same time. Healing is something practiced by healers that initiates a healing process so that we may obtain healing. All things to all people, healing, so used, as a construct for systematic research is thus close to worthless.

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This paper does not seek to resolve this issue, nor to offer any kind of a definition. That remains for another day. From a biomedical perspective, the word healing probably is best reserved for the third usage–the salutogenic process. Research on salutogenesis is almost nonexistent but holds considerable promise for unlocking the secrets of how the pathogenic process is countered. Healing, understood in the context of salutogenesis, represents the foundation for a "natural history of health"[2] formulated as an alternative to existing models of the pathogenically oriented natural history of disease. The study of healing, in that sense of the word, ought to be a major focus of basic science research, and perhaps will be someday.

For purposes of the comments that follow, however, the word healing is mostly used in the more familiar first context: as a class, or metaclass, of therapeutic interventions using touch (contact healing) or not (noncontact healing). Numerous schools and philosophies of healing exist, besides the Therapeutic Touch and Reiki mentioned above. These have been taxonomically described in various ways, such as on the basis of whether healers rely on ordinary or altered states of consciousness and on naturalistic or metaphysical belief constructs.[3] Therefore, no implication is being made that all healing modalities are equivalent, either in their practices or beliefs or in the energies that they purport to work with or utilize. The only commonalities, as far as the types of healing work being considered here, are these three constituent elements: (1) therapeutic use of the hands, (2) functional proximity to the client's body, and (3) engagement of subtle bioenergies of variant conceptions and descriptions.

## FROM CONFLICT . . .

Investigation of the efficacy of healers and of healing work has sparked some interest within the CAM field, although it lags behind most other areas. Important conceptual and theoretical writing of recent vintage, including nice summary statements from Benor,[4,5] Dossey[6] (the executive editor of this journal), and from the Samueli Institute,[7] are encouraging of thought-

 
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ful, systematic research. Serious scholarly attention to this topic actually dates back to even before the important research and writing of pioneers like Grad,[8] LeShan,[9] Solfvin,[10] and Krippner and Villodo.[11] As long ago as 1926, *JAMA* published a fascinating three-part series of articles on "religious healing,"[12] as comprehensive and reflective a piece of writing as has ever appeared on the topic. Nonetheless, proponents of contemporary biomedicine exhibit, by degrees, reactions ranging from apathy and disinterest to disdain and even rabid denunciation. Such views typically have been uninformed by any of the scholarly writing that exists on this topic, and also typically have confused this topic with absent prayer or faith healing or more lurid topics such as channeling or occult powers. Such historical and theoretical ignorance is embarrassing and inexcusable, in light of the excellent writing available on the topic of healing. It also, sadly, is undeniable.

Scientists offer many excuses for ignoring the work of healers. Many people reading this article, especially those with expertise on this topic, will be familiar with some or all of the following excuses: (1) All healers are fakes, frauds, charlatans, hoaxers, quacks, etc. (2) There is no empirical evidence supportive of healing. (3) There are no posited theories of healing. (4) There is no consensus mechanism for healing, thus it cannot possibly happen. (5) Features of purported explanatory models for healing either do not exist (eg, bioenergy) or are solely epiphenomena of the functioning of physical structures such as the brain (eg, consciousness).

One personal favorite rears its head every now and then: the assertion that, no matter the evidence, healing is impossible because it violates the laws of science, which are typically left unstated. Accordingly, biomedical research should not waste its time on this topic, as it is nothing but "mysticism masquerading as science," a newish buzz phrase latched onto by skeptics and used in reference to anything to which they object.[13]

All of these assumptions are false.

This posture is exemplified nicely in an infamous science fair project seeking to discredit Therapeutic Touch, purportedly designed by a nine-year-old fourth-grader, which was published in *JAMA* as conclusive proof that energy healing is "groundless."[14] This amateurish attempt at a scientific paper, which it turns out was sponsored by an organization of self-described "quackwatchers" and coauthored by a delicensed physician, has since been sufficiently debunked.[15] Key features of the study–its assumptions, design, data collection methods, statistical analysis, and conclusions–were faulty, and the authors ignored existing scientific work contrary to their own presumptions. Nonetheless, their write-up was published, accompanied by a coordinated public relations blitz, and was heralded as having permanently discredited and "falsified" the work of healers.

These sorts of exercises are as pointless as they are predictable. What skeptics fail to realize is that so many of the battles that they continue to fight are part of a war that they have already lost. One of the great underpublicized truths of modern science and medicine is that many of the presumably controversial phenomena disparaged by skeptics, notably Einstein's "spooky actions at a distance,"[16] which, in theory, can account for noncontact healing,[17] have long ago been empirically validated. So much of what is purportedly controversial really is not, at least among those physicians and scientists who bother to keep up with the literature. Perhaps if healers themselves were more conversant with research findings in the physical sciences, then they would contextualize their work in ways less likely to provoke the attacks of skeptics.[17]

As for the work of healers purportedly violating science, whatever that means, efficacious healing either happens or it does not. If it happens, then it is a part of reality. Who, when confronted with plain evidence of healing, could then assert something so strange as that it violates science, presumably science's inviolate laws? Are we not to believe our own observations? As for the crack about mysticism, a National Institutes of Health expert panel concluded over a decade ago that so long as a concept can be operationalized in some way, no matter how unconventional the concept, then it can be empirically studied.[18] Yes, even "mysticism"–to wit, the existing sociological literature on the topic[19] as well as ongoing scientific investigation of the transcendent experience within academic psychology, neuroscience, and other disciplines.[20]

Aside from disparagement by those few vocal physicians and scientists guilty of wearing blinders, issues related to the practice of medicine and the conduct of clinical research also impede progress toward scientific study of healing. For one, Western medicine and its basic-science foundations focus almost exclusively on pathogenesis, the process by which healthy or at-risk people or populations, exposed to pathogenic agents, cross the clinical horizon into symptomatology and, potentially, advanced disease states. Salutogenesis, or the process by which people or populations recover from illness or attain a state of high-level wellness, is a term used only by a few maverick sociomedical scientists. As a result of a specific biological or psychosocial therapy or intervention, the body mobilizes a coping response that moderates or buffers a respective pathogenic threat, leading to greater host resistance and decreased susceptibility, and thus amelioration of disease or disease risk.[2]

To Western medicine and biomedical science, salutogenesis does not exist. Most physicians and bench scientists, moreover, may never have heard of the concept or been exposed to it in their training. Where healing is considered at all, it is almost always in the familiar but limited context of wound healing and granulation of a focal lesion. On a whole-person level, the concept of healing is not really engaged at all, at least not typically as a unique process with unique determinants. Getting better is mostly seen as a matter of reversing or undoing the discrete processes implicated in becoming ill. Healers, with their focus on restoring balance and fostering wholeness and wellness more so than on solely curing pathology, may not emphasize outcomes that are valued by the mainstream of biomedicine.

Western medicine tends to prioritize quantifiable improvements in observable signs and biomarkers, which are "objective," over improvements in symptoms and patient perceptions of general well-being, which are labeled as "subjective." This is in keeping with an innate bias toward the professional pronouncements of those doing the treating over the self-reports of the actual people experiencing the illness. Statuses observed by the clinician and especially validated by laboratory work thus count for more than the reported experiences of the patient. Indeed, they may count for everything, and patient perceptions not at

all. Etic, biomedically sanctioned categories of experience are real; emic, lay definitions are just something to work around, or are invisible. For study of the work of healers, much of whose impact is often validated by self-reports of improvements in function, affect, and symptomatology, the normative biomedical perspective thus may militate against acknowledging much of what healers and clients would affirm as evidence of therapeutic efficacy.

What impedes valuation of the realities perceived by the people who have come seeking care? Are there perhaps deeper, intrapsychic issues involved in disvaluing patients' or research subjects' perceptions of their own status? As difficult as this is to confess, we cannot dismiss the possibility of professional hubris and conceit. This should not be overstated, but let us be honest, many medical and scientific professionals are skilled at exercising control and domination over their little corners of the world and will brook no resistance to their pronouncements. Authority and power are two of the perks of the white coat. In response, passivity is expected, questioning is a nuisance to be endured, and challenges are experienced as a threat, rather than a need for assurance. Situations that expose the fallibility or uncertainty of the biomedical worldview with respect to a given phenomenon are liable to provoke strong, protective reactions. In the clinic, patients whose behavior does not fit within acceptable bounds may be tarred with all sorts of disparaging labels that populate the medical lexicon: "crock," "gomer," "Camille."[21] In the lab, incongruous or unacceptable values may be labeled as outliers and discarded. In such a context, it is not surprising that the gatekeepers of biomedicine would tend to deride or disregard the work of healers whose successes are measured, in part, by improvement in outcomes that are considered "soft."

Structural factors in the practice of medicine also inhibit consideration or investigation of the work of healers. Turf issues and disciplinary boundaries are obvious concerns. Where healing has insinuated itself into clinical settings, such as in the case of Therapeutic Touch, the healer role may be perceived as principally female and primarily filled by nurses. Negative attitudes or sanctions justified on the basis of a presumed lack of evidence for efficacy may really be more about fear of encroachment by a competing class of caregivers presumably "lower" on the totem pole of authority and intellect. This may indeed exemplify a training or educational disparity, but not in the expected direction. Undergraduate and postgraduate medical education, increasingly dominated by scientific models grounded in molecular-biological models of pathogenesis, is unlikely to have exposed future physicians to anything related to healing. The psychic grids reinforced by the physician's world, perhaps along with a subtext of gender and class status conflict, as well as the pressures of conforming to "normal science" among clinical researchers, thus operate to marginalize more humanistic approaches to care. And what is more humanistic a modality than healing?

Distrust of those outside of the professional community, and especially of laypeople, may result in rash and uninformed judgments about phenomena that may be quite a bit more familiar to other professionals. Because one has never been exposed to certain concepts and ideas about healers or healing, these ideas must necessarily be wrong or false. Worse, this lack of knowledge about certain topics, such as healing work, may itself be invisible to those with the power to sanction its practice and study. Not only do some physicians not know about healing, but they do not know that they do not know. This kind of ignorance can be difficult to endure for healers and proponents of healing. But the sad truth, which many reading this article will recognize, is that too many people known for pontificating on this subject, such as certain professional debunkers, simply have no idea what they are talking about.

A case in point: in 2001, the present author published a scholarly trade book, *God, Faith, and Health*,[22] that summarized existing epidemiologic and clinical research on religion, spirituality, and health. Alongside chapters on social, behavioral, and biological mediators or cofactors involved in understanding these findings was a chapter entitled "Energy, Consciousness, and Mysticism." This chapter sampled some of the more interesting psychophysiological, neurophysiological, and health-related research and associated theoretical writing that have addressed topics such as nonlocal healing, spontaneous remissions, the therapeutic effects of meditation and yoga, and the psychoenergetic and bioenergetic systems postulated by many CAM therapies. In a snide review that appeared on an Internet magazine site and was subsequently reprinted in various skeptical outlets, one physician-reviewer confidently declared, "This stuff is decidedly non-Cartesian and backed up by zero evidence."[23] He was especially outraged by mentions of *chakras*, *nādis,* subtle energies, and acupuncture meridians, but, helpfully, he assured readers that "most of it is bunk."[23]

Now for the truth. The second edition of the Institute of Noetic Sciences report on 65 years of published empirical research studies, theoretical papers, and review articles on physical and psychological correlates of meditation and altered states of consciousness contains a 125-page bibliography of over 1,500 scholarly references.[24] An earlier bibliography from the Institute of Noetic Sciences on the topic of spontaneous remission contains 1,385 medical journal articles reporting the seemingly miraculous remission of cancers and other serious chronic diseases following inadequate or no treatment.[25] Benor's ongoing annotated bibliography of experimental research on the healing effects of distant intentionality, bioenergy work, and prayer now totals around 200 studies.[4] A nearly 20-year-old bibliography of clinical, theoretical, and empirical papers on yoga and meditation totals over 1,000 scientific publications.[26] The Samueli Institute's thorough summary of research and writing just on the topic of "spiritual healing, energy medicine, and mental intention effects," compiled by Jonas and Crawford, uncovered over 2,200 published reports, including 122 laboratory studies, 80 randomized controlled trials, 128 summaries or reviews, 95 reports of observational or nonrandomized studies, and 271 descriptive studies or case reports.[7] The National Library of Medicine's PubMed[27] database of published peer-reviewed medical journal articles contains a separate "complementary medicine" portal that, at the time of this writing, indexes 593,596 scientific papers, including 17,511 matching solely on the term "bioenergetic," 2,165 on the phrase "spirituality and health," 182 on the term "bioelectromagnetics," and 42 on the phrase "energy healing." This exercise could continue for another page, but will end now with a final observation: the thousands of years of Āyurveda

and Traditional Chinese Medicine practiced on hundreds of millions of patients in billions of clinical encounters, focusing on their *chakras* and Qi and meridians and other "bunk" for which there is "zero evidence."

Besides psychological and professional characteristics of physicians and scientists, certain existential and spiritual issues may come into play here as well. So many clinicians, it has been observed, are personally disconnected from any sense of higher self or spirit, perhaps a reflection of their nonreliance upon wellsprings of religious faith relative to the general population.[28] Nurses, by the way, are not immune. As members of the nursing profession buy into the prevailing mechanistic model of a human being and ultratechnological model of healthcare, they risk becoming "specialists without spirit,"[29] just as so many of their physician colleagues already have become. This can be understood as a state of "ungrounding," with much the same implications as in the term's electronic usage. Without a grounded path for an electrical current, a fault will not cause a breaker to trip and a fuse can overload and burn down a structure. This is as true for one's psyche as for one's home.

One consequence of such a disconnect from spirit, from the source or ground of being, thus may be an overload of harmful psychological energy, resulting in hypercritical, overly judgmental, and reactive mental states. Propositions counter to one's professional beliefs or values (or absence of values) must be ridiculed and trivialized lest one's own uncertainty or confusion or lack of understanding be exposed. Perhaps some may see this condition as developmentally adaptive in the intellectual training of scientists or physicians, even admirable, but it is not productive of emotional well-being nor does it prepare one for collegial relations with laypeople or patients. It certainly does not bode well for a cordial response if the proposition in question threatens the very hegemony and exclusivity of one's professional status and knowledge, as the existence of efficacious healers seems to do to some physicians and scientists.

Healers, interestingly enough, have taken note of this with some sympathy. The individuals upon whose terrain they apparently have trespassed may themselves be "wounded healers,"[30] no less wounded than the patients they are treating. Thus they are as much in need of empathy and respect as anybody else. But, given considerable differentials in political status and legitimacy, healers are powerless to intervene, except to offer compassionate care to those wounded biomedical professionals who happen to seek them out. Dossey has reflected on this situation, with some sadness and frustration:

> Modern medicine has become one of the most spiritually malnourished professions in our society. Because medicine has so thoroughly disowned the spiritual component to healing, most healers throughout history would view the profession today as inherently perverse.[31]

Underlying this "perverse" state most of all, it seems, is fear. Unchecked, gut-wrenching fear is not hard to discern among so many denouncers of healers, healing, and healing research. The often Inquisition-like reaction to those heretics that dare to care for suffering people without official sanction must be coming from somewhere more primordial than some sort of protective business instinct. Healing, according to an insightful essay by Stambolovic,[32] is perceived as an assault on the optimistic, science-worshipping dogma of modernity, which constitutes a foundation of Western medicine. The limits of official science can never be acknowledged, much as certain churches never allow deviation from adherence to their foundational myths. Heresy, in fact, is a reasonable metaphor here: healers and healing are "outside the pale," as are those who research these mysterious phenomena.[33] Their continued existence threatens tacit assumptions about what constitutes real or good science, and thus they must be stopped—or at the very least—marginalized.

The antihealing contingent likes to cast its critique in terms of Science, with a capital "S," whose integrity is apparently threatened by the study of healing. This is subterfuge, a misdirection play. Furthermore, any justification for healing, it is declared, must be in terms of "hard" outcomes and biomarkers, since they are the only legitimate ones—a position taken perhaps because it is assumed that healing cannot pass muster according to these parameters. The many positive findings in the scientific literature cited earlier say otherwise.

But this notion of "hard" science is itself faulty. Social scientists have long been interested in phenomena related to healers and have successfully applied a variety of reliable and valid observational, phenomenological, and ethnographic methods to the study of healers and healing for many decades.[34-37] The tacit assertion that healers and healing somehow cannot be legitimately researched in this way is just a canard. It is nothing but the same old objective-versus-subjective issue cloaked in a different garment. Not coincidentally, perhaps so-called objective outcomes are favored because they are most familiar to clinical and biomedical scientists, who may be largely unexposed to any of the broader health-related research enterprise under the aegis of other professions and disciplines, such as epidemiology and the medical social and behavioral sciences. Philosophers of science remind us, too, that objectivity is as socially constructed as the much-derided subjectivity so dismissively condemned by the defenders of "real" science.[38] The vitriol underlying the condemnation of studies of healing with positive outcomes based on subjective evaluations, self-reports, or qualitative observations may reflect an unspoken paranoia over maintaining control of this discourse, lest it slip into the hands of the differently credentialed.

## . . . TO COLLABORATION

How do we work around these issues and begin to advance the study of healing?

What is needed most of all is collaboration between scientists and healers. But this collaboration can proceed only without the arrogant presumption that scientists must be in charge and must set the agenda—defining terms, selecting outcomes, imposing a reality grid upon the healing transaction. This collaboration also requires healers to let go of their own negative preconceptions about science and medicine. Each partner, scientist and healer, brings something unique to the table. Each needs the other. Without either one, this collaborative effort is doomed. Without both scientist and healer working together, or at least not working at cross-purposes to each other, this research will not be—and cannot be—done.

These comments may seem reasonable enough, but fair warning: this is not the model that scientists are used to, and some will conjure up all manner of excuses to resist it. Multidisciplinary conversation has proved elusive for CAM–with practitioners of conventional medicine across CAM modalities and between practitioners and researchers–and there is no reason to expect that it will not be a challenge here as well. But without such conversations, healing research and healing itself will never gain full credibility within the medical community, like it or not.[39]

A major barrier to full collegiality with healers can be found in the professional culture of academic medical science. Biomedical scientists, and academic clinical investigators even more so, tend to act like little field marshals, operating under a military model of authority and control. They set the agenda, they choose the players, they direct the project, they author all scholarly products, they have final say on interpreting and spinning the results. That will not work here. What are required, instead, are open ears, open minds, and open hearts; investigators need to listen to what healers tell them and show them, and they must ask questions and observe. Contrary to the commonly heard assumption that there are no useful theoretical or explanatory models for healing, there actually are many–put forth by healers and consonant with numerous emic perspectives.[4,40-44] So, scientists, do not presume that you know more than healers!

Similarly, healers must not presuppose that they can get by without scientists. Scientific validation has much to offer healers. It is through science–through systematic empirical investigation of theoretical hypotheses–that we can determine what works, what does not, and how and why. Successful evaluation thus holds out the promise of eventual political, legal, and financial sanction. For healers, as with other alternative practitioners, this brings with it the possibility of credentialing standards[45] that could serve to open doors to full integration into conventional medical practices.[46] But this may not be a simple task, and not just because of resistance from mainstream biomedicine.

It is a commonly observed conceit among practitioners of unconventional therapies that their respective modality requires no evaluation–its effectiveness is self-evident, having come from on high. A variation on this theme is that the modality is actually unable to be evaluated due to imaginary limitations inherent in all existing research designs or methods, which prevent evaluation of this one extra special therapy. This is uninformed and harmful nonsense. Unfortunately, this latter myth still plagues the CAM field.[18] Some healers may be as reticent as some physicians and scientists to acknowledge uncertainty, resistant of any systematic investigation of what they do for fear of finding out that what they do does not work. One function of research is cull out the wheat from the chaff, and no one wishes to discover that they are chaff. As is true for practitioners of other alternative therapies, some practitioners of healing thus may be just as opposed to collaborating with researchers as vice versa.

Practitioners of alternative therapies–including healers–must recognize and accept that careful and rigorous scientific study is how society is able to evaluate innovations, and is thus a necessary condition for subsequent adoption. If efficacious methods of healing are to become accepted within medicine and among the larger client community, to the greater good, one presumes, then this is how it will happen. Scientists doing science are required to achieve this end; healers working in isolation cannot do so, no matter their good intentions. In collaboration between scientists and healers, the big winner stands to be the ailing public, not just the reputations of healers. If healers are as selfless and altruistic as so many purport to be, then they would do well to take these words to heart.

Among proponents of healing research, Hufford[47] speaks in a more guarded tone about the desirability of an eventual acceptance of healing into the mainstream of Western medicine. He warns of the danger of co-optation, which has occurred for other alternative modalities, inevitably resulting in an "unacceptable distortion of healing."[47(p305)] Still, he argues that initiating rigorous programs of systematic research remains the best and only way to break down barriers that continue to marginalize healers. I would agree.

Too many healers, though, disparage scientists and are guilty of condemning science on the basis of the grossest stereotypes of the scientific method, making light of the difficult constraints of life in the academic community, constraints that so many earnest scientists courageously struggle against every day to survive in that environment. This response is disturbingly similar to the disparagement of healers by biomedical professionals based on uninformed and superficial stereotypes. There is a valid critique to be made of the biomedical science establishment and of academic medicine, but not by healers. Unless they double as credentialed medical professionals or scientists (and some do, to be fair), healers are not competent to criticize. Healers criticizing physicians and scientists without understanding just what it is that physicians and scientists do, and why, is as arrogant as skeptical physicians and scientists expressing condescending disdain for the life's work of healers. So, healers, do not presume that you know more than scientists!

In sum, each partner–scientist and healer– brings something useful to the table and something useful to the other partner. Each side needs the other, and we all need both, if we are ever to understand healing.

What do scientists bring to the table? Scientists bring substantive knowledge of the natural history of disease. They bring an understanding of how to frame and test hypotheses. They (ideally) bring methodological skill, knowledge of how to design an appropriate study, and a capability to intelligently analyze empirical data. The best among them also bring experience in navigating the straits of institutional science, with all of its nuances of grant writing and funding and publishing. In sum, scientists know *how* to conduct research.

What do healers bring to the table? Healers bring substantive knowledge of healing modalities, at least their own particular school or philosophy of healing. This is no small contribution. Without this substantive knowledge, it is impossible to know what questions to ask, what to assess, and what to expect in terms of outcomes. Healers bring expertise in conducting healing, something scientists will not possess unless they also have trained in a respective healing modality. Healers bring an understanding of the healing process–perhaps not the same understanding that scientists bring, but in light of biomedicine's neglect of salutogenesis, some healers may be quite a bit more

insightful on this topic than all but the most creative and well-read scientists. Healers also bring the sum total of their own professional training, which will include all of the pertinent what, where, when, how, and why issues related to their practice, such as sensitivity to innumerable nuances related to treating clients. Scientists must learn to recognize and respect this fact—that healers may be just as well trained, credentialed, and experienced as they are, and thus bring categories of professional expertise that scientists have no exposure to at all. In sum, healers know *what* to research.

Healers also have something to offer clinicians. Physicians may be generally unaware of the considerable upside that healing work offers to their own clinical practice. One accomplished practitioner and teacher of bioenergy healing has nicely articulated the benefits of integrating healers into conventional primary care practices, hospitals, and pain treatment centers.[48] These include follow-up care for patients with chronic and progressive diseases; cost-effective, safe, and noninvasive treatment; hands-on human contact and compassionate support, a secondary outcome that may offer considerable therapeutic benefit; and the ability to provide medical colleagues with useful feedback regarding patients' bioenergetic well-being. Some clinicians may not see the value in these potential contributions. So be it. But let it be known that the inclusion of healers among the provider base of integrative primary care practices is a phenomenon that is expanding across the United States.[49]

There is reason then to be hopeful. The divide separating scientists and physicians, on the one hand, and healers, on the other, can be bridged. The wounds can be healed. This will require that scientists reframe their ideas about healing and that healers reframe their ideas about science. To this end, several prerequisites must be met. These include rethinking how we conceive of healing, how we train clinicians, and what we prioritize in our research agendas.

An immediate need, but liable to be overlooked, is something that social scientists refer to as theory building. We must continue to develop theoretical models of what has been termed the "natural history of health,"[2] so that the practice of healing can be conceptually put in context in terms of a salutogenic, and not pathogenic, framework. Such models ought to start with a more holistic understanding of healing as multifactorial in its determinants and multidimensional in its outcomes. The work of healers is not necessarily about attacking and destroying pathology, but restoring wholeness and equilibrium—reequilibrating the human system, often through an input of some type of bioenergy, and almost always accompanied by positive intentionality. It would behoove us to begin considering what factors might facilitate this process, what factors might interfere, and what the results might be for respective physiological systems.

Medical, nursing, and health sciences education would do well to include material on philosophies and techniques of healing, if for no other reason than to better inform and prepare future practitioners for what awaits them (and their patients) out in the world. So many clinicians, even staid academic physicians, have had their own experiences of unconventional healing, yet there may be great reticence to share these experiences with others, whether students or colleagues.[50] This is understandable, but these anxieties will still have to be met head-on if future generations are to be educated about healing. This will require, for many, a basic shift wherein the phenomenon of anomalous or unexplained recovery is something to embrace and explore, rather than something to deny or denigrate or dismiss. To generalize, nurses are farther ahead in this regard, but there is little in the way of uniformity. Most nursing students, just like most medical students, are never exposed to this topic.

Most critical of all for advancing scientific understanding of healing is development of programs of collaborative research with healers. Clinical, health services, basic-science, and epidemiologic studies of healing would all benefit from such partnerships. Detailed research agendas for the study of healing already have been proposed. But, as mentioned, their success will depend upon collaborative partnerships among scientists and healers, each partner deferring to the other on matters in which the greatest expertise lies with one or the other.

The place for healers in efficacy studies such as clinical trials is obvious, but need not be limited to performing the intervention. Emic models of what happens during healing work, and how it happens, can usefully inform identification of study variables and covariates as well as subsequent efforts to interpret findings.

Health services research, such as utilization studies, would also benefit from the input of healers. The capacity of healers to deconstruct the normative clinical encounter for their modality will enable more precise documentation of client experiences, as well as more realistic expectations as to what outcomes to anticipate from what types of encounters for what clinical presentations in what clients.

Basic-science research, such as laboratory studies of anatomical features of the bioenergy system and of physiological effects of healing, requires healers not just as study subjects but as guides. Healers will know what to look for, where to look, and under what conditions to expect changes in form or function.

Finally, in clinical-epidemiologic research, such as population-based outcomes studies of healing, healers can valuably identify categories of study variables to be included in data collection instruments. The training and professional expertise of healers will enable unique insights into what long-term outcomes to expect and into the anticipated determinants of these outcomes. The longitudinal impact of healing work on population-health indicators is another especially exciting research frontier, but the present author is admittedly biased, as he is an epidemiologist. If healing is what healers say it is, and if it does what they say it does, then it would surely be a phenomenon of considerable importance for public health.

Two common themes run through these summaries of prospective research: (1) the healer as an interpreter of realities and experiences that may be far less familiar to the scientists overseeing the research, and (2) the scientist as methodologist and creative partner who can use the expertise of healers as input in formulating testable study questions and interpretable outcome measures. Reliable and valid measurement or assessment of study variables and parameters is a foundation for all empirical research and a sine qua non for producing useful results. It stands to reason that scientists would willingly consult experts in what they intend to study, in this case healers, to get a handle on pertinent concepts and on how they are conceived of and iden-

tified by practitioners. But oftentimes, scientists, just like physicians and skeptics, do not know that they do not know.

A couple of decades ago, the early history of the religion, spirituality, and health field, a couple of decades ago, was replete with egregious examples of biomedical and clinical scientists venturing blindly into a foreign land–namely, religious assessment–with predictable results. These investigators, apparently unaware that entire academic fields of study, accepted theories and constructs, and scores of validated instruments had existed for decades, devoted themselves to positing illogical study questions and crafting study variables whose wording and response categories were, to put it mildly, absurd: inquiries into the church attendance patterns of Jews, classification of Baha'is and Sufis and Mormons as Protestant Christians, failure to differentiate between transcendental meditation and liturgical prayer, costly development of 200-plus-item batteries of unusable questions assessing religious constructs for which dozens of validated brief indices already existed. Such an unfortunate situation can be avoided for healing research only if healers are included in the earliest discussions of proposed research projects.

Some of these points, though not all of them, have been made by others. Good examples of collaborative involvement even have made it into print in top-line scientific journals. The work of Kiang and colleagues[51,52] at the Samueli Institute has already been productive of successful basic-science research exemplifying thoughtful scientist-healer collaboration. Yet, despite such successes, a brave new era of healing research seems ever emerging, but never quite emerged. This is because investigators still have been largely unwilling to accept healers as full professional colleagues. Researchers must be willing to share some of the leadership, and limelight, with those who may know much more than they do about the topics that they purport to study. At the very least, they must be humble enough to seek consultation from healers and strongly consider their views, even where their own presuppositions might differ. The types of consults spelled out above, especially related to assessment issues, will do much to enhance the validity of empirical research on healers and healing.

In all of this, the insights of healers must inform scientists' conceptual understandings of what it is that goes on when healers ply their trade. Further, characteristics of healers as well as healer-defined parameters of the transaction between healer and healee, defined in terms of bioenergy or consciousness or something else, may be critical variables to consider in the design of studies and in the analysis of data. This cannot be accomplished unless healers are partnered closely with scientists in developing standards and guidelines for the empirical study of healing. Simply put, scientists need to work closely with healers to know what questions to ask–or at least where to begin asking. As of yet, however, this call remains largely unfulfilled.

Even in the thoughtful and comprehensive recommendations offered for healing research by the Samueli Institute,[53] healers themselves seem almost invisible. Over 200 helpful and very detailed questions are provided to guide prospective investigators in designing and conducting rigorous studies. These guidelines touch on issues related to study design, subject selection, research methods, randomization, masking, placebos, controls, assessment, data collection, analysis, and much more. This is a truly commendable product, and by far the finest attempt to date to standardize empirical research on healing. But, like most existing research on the topic, the focus is on modalities of healing rather than on the characteristics (or professional opinions) of practitioners of healing. As recently observed by Sutherland and Ritenbaugh,[54] research to date "has paid relatively little attention to the voices, states, or traits of the healers themselves in relation to their work." In fairness, as the authors admit, this may be a situation of easy-to-criticize-but-hard-to-fix until such time that healers can "come together to find common language to describe their own experiences during healings."

Despite these difficulties, successful efforts have been made to foster true collaborative relationships between scientists and healers. The Institute of Noetic Sciences has been involved in developing strategic partnerships with academic medical scientists to build funded research programs around topics such as distant healing, subtle-energy medicine, and the health impact of intentionality. A highlight of this effort, according to Schlitz, "involves inclusion of energy healers and intuitives as full participants in the formulation of research questions and design."[55] Through standard qualitative research methods, such as use of grounded theory and structured interviews, investigators already have drawn on the collective wisdom and expertise of healers to determine conceptual categories useful for respective research projects.[56] The Samueli Institute, too, has endeavored to validate assessment of one of the most personal and subjective aspects of the healer's work, namely the existence of a hypothetical "healing presence," drawing on the perspectives of healers from diverse traditions.[57]

Collaborative research partnerships between scientists and healers thus are possible, are not unprecedented, and remain an unfulfilled potential only on account of our collective lack of effort. If scientists can overcome their inertia, and any other preexisting professional and psychological barriers, and if healers can overcome their own resistance to critical evaluation, then true scientist-healer collaboration can happen. Only then may healing someday earn a place at the table along with all of the other therapeutic options sanctioned by modern medicine.

If this ever comes to pass, it will be a good thing for healers, to be sure. But the insights that we gain through scientific validation of healing may be a source of great learning for us about the therapeutic efficacy of all medical practices, including those of allopathic physicians. Remarkable experimental research by Schlitz[58] provides evidence that the expectations of investigators–their beliefs and attitudes–are a determining factor in whether positive results are obtained. In her study, an investigation of distant mental interaction with living systems (DMILS), subjects were monitored while being stared at via closed-circuit television from another room. She observed greater electrodermal activity during these remote staring periods than during control conditions. The same experiment, replicated by a nonbeliever in the possibility of DMILS effects, found nothing. The only nonconstant across these two trials, Schlitz concluded, was the mental expectation of the investigator. These results may explain why the studies done by skeptics fail to identify therapeutic effects for healers: they are literally hoping that no one gets healed. More provocatively, these results also may explain some of the therapeutic effects demonstrated for conventional

therapies in which mainstream clinical investigators have confidence.

If consciousness can impact on the physical world in this way, then there is a more significant implication of this research. Perhaps we have been given powerful confirmation of the potential salience of positive intentionality for the effectiveness not just of psychobiological experiments, but of human interaction in general. This would include, presumably, the work of healers as well as of conventional medical practitioners. Clearly, this is an issue of profound and immediate importance for those of us concerned with how compassionate and efficacious care can be offered to sick and suffering people.

In an essay published several years ago, Dossey addressed the theme of "how healing happens."[59] "The short answer," he stated, "is: Nobody knows."[59(p347)] The scientific quest to answer this question, one would think, should be a high priority for biomedical scientists and healers. Both healers and scientists are experts in their respective realms. Both realms are essential to advancing the enterprise of evaluating and understanding the work of healers. The obvious requirement is that both scientist and healer recognize the expertise of the other, and recognize the critical need for that expertise in the successful attainment of this objective. But until healers shed their distrust of scientists, and scientists release their presumption of authority, nothing meaningful will happen. It is high time for this situation to change.

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