

Therapeutic Intent/Healing Bibliography of Research

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There is increasing evidence that consciousness can manifest nonlocally, at a distance, in ways that are health-relevant.

Jonas WB. The middle way: Realistic randomized controlled trials for the evaluation of spiritual healing. *The Journal of Alternative and Complementary Medicine*. 2001;7(1):5-7. A positive meta-analysis of studies in distant mental influence on animate and inanimate systems, including distant healing and prayer.

Astin JE, Harkness E, Ernst E. The efficacy of "distant healing": a systematic review of randomized trials. *Annals of Internal Medicine*. 2000;132:903-910. Of 23 studies in distant healing, 57% showed positive results. A cautiously positive systematic review.

Abbot, Neil C, Healing as a therapy for human disease: a systematic review, *Journal of Alternative and Complementary Medicine*, 2000, 6(2), 159-169. This meta-analysis covers 59 randomized controlled studies, (including 10 dissertation abstracts and 5 pilot studies) of healing in humans up to the year 2000. Of 22 fully reported trials, 10 suggested significant effects.

Braud, William and Schlitz, Marilyn. A methodology for the objective study of transpersonal imagery, *Journal of Scientific Exploration* 1989, 3(1), 43-63. This meta-analysis focuses on electrodermal activity (EDA), a measure of skin resistance that reflects states of tension. Healers have been able to selectively lower and raise EDA, aided by feedback from a meter attached to the healee's skin. In a series of studies by William Braud and Marilyn Schlitz there were 323 sessions with 4 experimenters, 62 influencers and 271 subjects. Of the 15 studies, 6,(40 per cent) produced significant results. Of the 323 sessions, 5 percent were successful ($p = .000023$). That is, such results could have occurred by chance only twenty three times in a million.

Schlitz, Marilyn/ Braud, William, Distant intentionality and healing: assessing the evidence, *Alternative Therapies* 1997, 3(6), 62-73. Analyzing 19 experiments in which one person sought to influence another person's electrodermal activity (EDA), they found highly significant effects ($p < .0000007$).

NONLOCAL MIND, DISTANT HEALING, AND PRAYER

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The idea that the human mind is infinite or nonlocal - that at some level it cannot be confined to specific points in space, such as the brain and body, or in time, such as the present, is ancient.

One of the most universal expressions of nonlocal mind is prayer and distant healing.

What is prayer? I define it arbitrarily and broadly as "communication with the Absolute," and I invite anyone to refine this definition in his or her own way. This definition is broad enough to encompass all the major religions including nontheistic traditions such as Buddhism, in which prayer is vital but is not directed to a personal god. Researchers who do experiments in the field of prayer-and-healing often prefer to use the term "distant intentionality" instead of prayer in order to avoid religious connotations and to emphasize the purposeful, mental aspect of prayer. I shall follow the same practice, although I recognize that in Western cultures prayer usually occurs in a religious context.

Why should modern medicine concern itself with prayer and the nonlocal actions of human consciousness? (Dossey, 2000) Why should we be concerned about validating it and integrating these phenomena into healthcare? One might argue that such a phenomenon, even if it exists, ought to be set aside in favor of less challenging questions, such as whether or not one's thoughts or prayers can affect one's own body. There are compelling reasons to set our sights on the more elusive quarry at the outset. If distant effects of mental intentionality exist, we shall have to deal with them sooner or later, whether we like it or not. If we acknowledge them "up front," they may lend a comprehensiveness to our thinking about the dynamics of consciousness which otherwise would be sacrificed. Acknowledging these phenomena early on might spare us at some later date from having to retrofit our models in order to accommodate them, or perhaps having to scuttle our models altogether.

SIX QUESTIONS

In asking whether or not prayer or mental intentions can bring about changes in distant individuals, let's ask six questions. The evidence provided following each question is not exhaustive, but is intended to only suggest an answer.

(1) Does an effect exist? Is it possible - in principle - for individuals to influence, at a distance, the physiological function of a living organism?

(a) Ten subjects tried to inhibit the growth of fungus cultures in the laboratory through conscious intent by concentrating on them for fifteen minutes from a distance of approximately 1.5 yards. The cultures were then incubated for several more hours. Of a total of 194 culture dishes, 151 showed retarded growth (Barry, 1968).

(b) In a replication of this study, one group of subjects demonstrated the same effect (inhibiting the growth of fungal cultures) in sixteen of sixteen trials, while stationed from one to fifteen miles away (Tedder and Monty, 1981).

(c) Sixty subjects not known to have such abilities were able both to impede and stimulate significantly the growth of cultures of bacteria (Nash, 1982).

(d) Sixty university volunteers were asked to alter the ability of a strain of the bacterium *Escherichia coli* to utilize lactose. This strain normally mutates from the inability to

metabolize lactose ("lactose negative") to the ability to use it ("lactose positive") at a known rate. The subjects tried to influence nine test tubes of bacterial cultures - three for increased mutation from lactose negative to lactose positive, three for decreased mutation of lactose negative to lactose positive, and three tubes uninfluenced as controls. The bacteria mutated in the directions desired by the subjects (Nash, 1984).

(e) Seven subjects - two spiritual healers, one physician who was interested in and believed in spiritual healing, and four students with neither experience nor interest in healing - were asked to increase the growth of yeast in test tubes "by the mental method of his choice." 240 test tubes were used -- 120 for the mental intent, 120 for controls. The spiritual healers and the believing physician produced significant results ($p < 0.00014$) and the indifferent students produced chance results (Haraldsson and Thorsteinsson, 1973).

(2) Can such an effect influence intact animals?

In twenty-one experiments conducted over a period of several years, healers tried to awaken mice more quickly from general anesthesia. These experiments were increasingly refined. In one variation, only the image of the experimental mouse was projected on a television monitor to the healer in a distant room, who tried to intervene mentally via the image. Nineteen of the twenty-one studies showed highly significant results: earlier recovery from anesthesia in the mice to whom positive mental intent was extended (Watkins and Watkins, 1971; Watkins, Watkins, and Wells, 1973; Wells and Klein, 1972; Wells and Watkins, 1975).

In a controlled experiment, a noncontact form of "laying on of hands" was employed in an attempt to cure mice of transplanted mammary adenocarcinoma. Three replications were done. Overall, 29 of 33 experimental mice (87.9 percent) were cured of the cancer, compared to 18 of 26 control mice on site (69.2 percent) and 0 of 8 control mice off site (0 percent). Later reinjection of tumor cells in treated, cured mice did not take (Bengston and Krinsley, 2000). Researchers injected 60 mice with a tumoral suspension. Half of the mice were treated with "negative PK" for 20 sessions and half were not, and the weight and volume of tumor growth was measured. The treated mice showed significantly less tumor growth than untreated mice ($P < 0.01$) (Onetto and Elguin, 1966).

(3) Can such an effect influence biochemical processes in humans?

Blood platelets isolated from healthy human volunteers were treated by a healer, who tried to influence the activity of the enzyme monoamine oxidase (MAO). MAO activity was measured before and after the mental intent in both intact and disrupted cells. The overall effect was to increase the variability of MAO activity relative to untreated control samples ($p < 0.001$) (Rein, 1985).

(4) Can such an effect influence human tissue?

Thirty-two subjects mentally attempted to prevent the hemolysis of human red blood cells (RBCs) in test tubes containing a hypotonic saline solution, as measured by

standard spectrophotometric techniques. Significant differences were found between the "prevent" and control tubes ($p < 1.91 \times 10^{-5}$) (Braud, 1988).

(5) Can such an effect influence intact humans ?

Scores of controlled studies have demonstrated the correlation of positive mental intent with physiological effects in distant human beings. This material has been the subject of several reviews (Benor, 1990, 1993; Dossey, 1993; Solfvin, 1984). Among the studies:

(a) In a double-blind experiment involving 393 persons admitted to a coronary care unit, intercessory prayer was offered from a distance to roughly half the subjects. Significantly fewer patients in the prayer group required intubation/mechanical ventilation ($p < 0.002$) or antibiotics ($p < 0.005$), had cardiopulmonary arrests ($p < 0.02$), developed pneumonia ($p < 0.03$), or required diuretics ($p < 0.005$). Subjects in the prayer group had a significantly lower "severity score" based on their hospital course following admission ($p < 0.01$) (Byrd, 1988).

(b) In a double-blind experiment involving 990 consecutive patients who were admitted to the coronary care unit (CCU), patients were randomized to receive remote, intercessory prayer or not. The first names of patients in the prayer group were given to a team of outside intercessors who prayed for them daily for 4 weeks. Patients were unaware they were being prayed for, and the intercessors did not know and never met the patients. The medical course from hospital admission to discharge was summarized in a CCU course score derived from blinded, retrospective chart review. The prayed-for group had about a 10 percent advantage compared to the usual-care group ($P = .04$) (Harris et al, 1999).

(c) In a double-blind experiment involving 40 patients with advanced AIDS, subjects were randomly assigned to a "distant healing" (DH) group or to a control group. Both groups were treated with conventional medications, but the DH group received distant healing for 10 weeks from healers located throughout the United States. Subjects and healers never met. At 6 months, blind chart review found that DH subjects acquired significantly fewer new AIDS-defining illnesses ($P = 0.04$), had lower illness severity ($P = 0.03$), and required significantly fewer doctor visits ($P = 0.01$), fewer hospitalizations ($P = 0.04$), and fewer days of hospitalization ($P = 0.04$). DH subjects also showed significantly improved mood compared with controls ($P = 0.02$) (Sicher et al, 1998).

(d) In thirteen experiments, the ability of sixty-two people to influence the physiology of 271 distant subjects was studied (Braud and Schlitz, 1983,1988,1989). These studies suggested that

(1) the distant effects of mental imagery compare favorably with the magnitude of effects of one's individual thoughts, feelings, and emotions on one's own physiology;

(2) the ability to use positive imagery to achieve distant effects is apparently widespread in the human population;

(3) these effects can occur at distances up to twenty meters (greater distances were not tested);

(4) subjects with a greater need to be influenced by positive mental intent - i.e., those for whom the influence would be beneficial -- seem more susceptible;

(5) the distant effects of intentionality can occur without the recipient's knowledge; (6) those participating in the studies seemed unconcerned that the effect could be used for harm, and no such harmful effects were seen; and

(6) the distant effects of mental intentionality are not invariable; subjects appear capable of preventing the effect if it is unwanted.

(7) Are these effects limited to human intentionality, or are they widespread in nature?

Claims that humans can achieve distant effects through mental intention is often met with skepticism and derision. These objections might be tempered if it can be shown that this ability is present in nonhuman species as well. Although we do not know what animals think and whether or not they are really intending, there nonetheless is evidence suggesting that "animal consciousness," however it may be defined, is capable of manifesting at a distance in ways not unlike those seen in humans.

(a) Researchers tested the possible influence of 80 groups of 15 chicks on a randomly moving robot carrying a lighted candle in an otherwise darkened room. Baby chicks prefer to be in the presence of light; could this preference somehow influence the movement of the candle-carrying robot? In 71% of the cases, the robot spent excessive time in the vicinity of the chicks. In the absence of the chicks, the robot followed random trajectories. The overall results were statistically significant ($p < 0.01$) (Peoc'h, 1988,1995).

(b) Researchers collected fifty-four accounts of animals who returned to their owners, sometimes over colossal distances. These instances were unexplainable by sensory cues or by homing instincts; the animals often traveled to places they had never been. These instances suggest some form of extended awareness (Dossey, 1989, p. 112; Rhine and Feather, 1962).

EXPLAINABLE BY SUGGESTION?

The distant effects of intentionality suggested herein cannot easily be explained by placebo-type influences such as suggestion and expectation. These studies are generally double-blind in design. Moreover, most of the studies in this field examine the distant effects of intentionality not on other humans but on lower organisms (bacteria, yeast, fungi), cells (red blood cells or other types of tissue), plants (germinating seeds, growing seedlings), rats, and mice. These organisms are assumed to be immune to the effects of suggestion and expectation, and they presumably do not think positively (Dossey, 1993).

NONLOCAL MODELS OF CONSCIOUSNESS

These effects cannot be accommodated by conventional models of consciousness, which generally assume that consciousness is either an emergent property of the brain or is identical with it. All such models are local in nature -- i.e., they assume that consciousness and its effects are localized to specific points in space (brains, bodies) and time (the present moment). Distant effects of intentionality are prohibited by such models. If the above phenomena are to be accommodated, our local models of the mind may have to yield to some type of model that is nonlocal (Dossey 1989, pp. 1-11). Such a model would not localize or restrict consciousness spatiotemporally.

ADVANTAGES OF A NONLOCAL MODEL

A nonlocal model of consciousness has several advantages.

* Such a model would be comprehensive. It would accommodate anomalous observations that do not fit within the current local models of the mind-brain relationship.

* Suggestions that consciousness is spatiotemporally extended are not new within science. For example, such proposals were advanced by Nobelist Erwin Schrödinger, one of the patriarchs of modern physics, as well as by the famous logician-mathematician Kurt Gödel (Dossey, 1989, p. 125 ff).

* A host of distant manifestations of consciousness have arisen in other fields of research, not mentioned here, which also require a nonlocal model of consciousness for their explanation (Jahn and Dunne, 1987; Radin and Nelson, 1989; Radin, 1997a).

* Nonlocal events have repeatedly been demonstrated experimentally within quantum physics, our most accurate science, for over two decades (Herbert, 1987, 1993).

Mind-body theorists are therefore not being asked to "invent" nonlocality. While the philosophical ramifications of quantum nonlocality are unclear, the experimental findings appear to be no longer in doubt. The fact that physicists are free to contemplate nonlocality surely makes it more permissible for mind-body theorists to do the same. Cautions, however, are in order. It is currently unknown whether or not quantum nonlocality has any relationship whatever to the nonlocal events observed at the level of the mind, such as the distant effects of intentionality. Nobel physicist Brian Josephson has proposed that consciousness-mediated events represent a form of "biological utilization" of quantum nonlocality, and that the nonlocality observed in the subatomic domain will eventually explain nonlocal events at the macroscopic, molar levels of life (Josephson and Pallikara-Villas, 1991). This suggestion remains unproved.

* Respected scholars in various fields - mathematics, physics, biology, and the cognitive sciences - including Nobelists, are offering theories that fully permit nonlocal manifestations of consciousness such as those seen in intercessory prayer (Dossey, 1997). As an example, mathematician David J. Chalmers has advanced the idea that consciousness is fundamental in the universe, perhaps on a par with matter and energy (Chalmers, 1995a, 1995b). Chalmers' view is widely considered to be the most fertile

hypothesis currently circulating in the field of consciousness studies. Chalmers cites a recent proposal along the same lines by Nobel physicist Steven Weinberg, who suggests that consciousness may be subject to physical laws all its own, which a complete "theory of everything" may have to recognize (Chalmers, 1995). While not demonstrating that the effects of distant intentionality actually exist, these proposals are cordial to the possibility and permit the above data to be taken seriously.

British mathematician C. J. S. Clarke has also offered a sophisticated nonlocal theory of consciousness, which similarly regards consciousness as infinite in space and time (Clarke, 1995). Clarke's theory is anchored in an approach in mathematics known as quantum logic. These are only two among a score of provocative ideas about the possible nonlocal nature of the mind (Dossey, 1997). These hypotheses are important because they elevate the level of plausibility of intercessory prayer and distant healing.

THE MYSTERY OF CONSCIOUSNESS

Those who consider the distant effects of prayer to be implausible might be reminded that the origins of consciousness and its relationship to the brain and body are a mystery. Several outstanding scholars have emphasized our appalling ignorance about these matters. John Searle, one of the most distinguished philosophers in the field of consciousness, has said, "At our present state of the investigation of consciousness, we don't know how it works and we need to try all kinds of different ideas" (Searle, 1995). Philosopher Jerry A. Fodor has observed, "Nobody has the slightest idea how anything material could be conscious. Nobody even knows what it would be like to have the slightest idea about how anything material could be conscious. So much for the philosophy of consciousness" (Fodor, 1992). Recently Sir John Maddox, former editor of *Nature*, soberly stated, "The catalogue of our ignorance must...include the understanding of the human brain.... What consciousness consists of...is...a puzzle. Despite the marvelous success of neuroscience in the past century..., we seem as far away from understanding...as we were a century ago....The most important discoveries of the next 50 years are likely to be ones of which we cannot now even conceive" (Maddox, 1999). If these observers are anywhere near the truth, we should be hesitant in declaring emphatically what the mind can and cannot do.

THE FUTURE

One offers proposals such as these with hesitation, realizing in advance their extraordinary capacity to evoke not just skepticism but cynicism and derision as well. A response to the commonest criticisms of nonlocal manifestations of consciousness can be found elsewhere (Dossey, 1995, 1998; Honorton, 1993; Radin, 1997, pp 205-227).

However, the question is really not whether our current model of the mind-brain-body relationship will change, but what the new model will be. The prediction from this quarter is that future visions of consciousness will be nonlocal in nature and will transform modern healthcare (Dossey, 1999). Nonlocal models will not do away with local

formulations. They will subsume, not exclude, them, just as the more comprehensive quantum-relativistic views in physics did not eradicate Newtonian concepts, which

remain extraordinarily useful. We should acknowledge, however, that nonlocality is not an "explanation" for the distant effects of intentionality. No one, including physicists, understands how nonlocal events take place, although many suggestions have been put forward. These are often based in information theory (Rubik, 1995). A novel hypothesis that relies on the quantum vacuum and zero point fields has recently been advanced by systems theorist Ervin Laszlo (Laszlo, 1995).

Some insist that we delay combining prayer with the use of drugs and surgical procedures in our hospitals and clinics until we have more evidence of prayer's effectiveness. Certainly further investigation of intercessory prayer is warranted, but we need not wait until all the answers are in before employing prayer adjunctively. This view is represented by Lancet editor Richard Horton in his "Precautionary Principle" (Horton, 1998). Horton states, "We must act on facts and on the most accurate interpretation of them, using the best information. That does not mean that we must sit back until we have 100 percent evidence about everything. When the...health of the individual is at stake...we should be prepared to take action to diminish those risks even when the scientific knowledge is not conclusive."

Skeptics of prayer are plentiful, of course, and skepticism should be encouraged in any area of science. However, skepticism can shade into a type of dogmatic materialism that excludes intercessory prayer in principle, as when Newton's colleagues condemned universal gravity as occult nonsense without weighing the evidence (Mills, 1996). Both true believers and committed disbelievers in intercessory prayer might heed the view of mathematical physicist and philosopher Alfred North Whitehead, who co-authored *Principia Mathematica* with Bertrand Russell (Whitehead, 1948):

The Universe is vast. Nothing is more curious than the self-satisfied dogmatism with which mankind at each period of its history cherishes the delusion of the finality of its existing modes of knowledge. Sceptics and believers are all alike. At this moment scientists and sceptics are the leading dogmatists. Advance in detail is admitted: fundamental novelty is barred. This dogmatic common sense is the death of philosophical adventure. The Universe is vast.

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Meta-analyses of healing studies

Abbot, Neil C, Healing as a therapy for human disease: a systematic review, *Journal of Alternative and Complementary Medicine*, 2000, 6(2), 159-169.

This meta-analysis covers 59 randomized controlled studies, (including 10 dissertation abstracts and 5 pilot studies) of healing in humans up to the year 2000. Of 22 fully reported trials, 10 suggested significant effects. There were 8 studies rated as methodologically sound, of which 5 showed significant effects. The heterogeneity of the studies precluded a meta-analysis. Small sample sizes in the 15 studies in the dissertations and pilot group may have contributed to the lack of significant effects in 11 of them. The inclusion of the the abstracts and pilot studies weakens this analysis.

Astin, John A/ Harkness, Elaine/ Ernst, Edzard, The efficacy of "distant healing": a systematic review of randomized trials, *Annals of Internal Medicine* 2000, 132, 903-910. <http://www.acponline.org/journals/annals/06jun00/astin.htm>

John Astin, assistant professor at the University of Maryland Medical School, Edzard Ernst, Chairman of the Department of Complementary Therapies at the University of Exeter in England, and Elaine Harkness, reviewed 23 studies: 5 with prayer healing, 11 with non-contact Therapeutic Touch, and 7 miscellaneous distant healing approaches. A positive effect was found in 57 percent of these. The study is a bit peculiar in including non-contact Therapeutic Touch as distant healing, but within the study this category is analyzed separately. Overall, for the 16 trials with double blinds, the average effect size

was 0.40 ($p < .001$). For 10 TT studies meeting their selection criteria, the average effect size was 0.63 ($p < .003$). For the prayer studies the effect size was 0.25 ($p < .009$). For the "other" studies the average effect size was 0.38 ($p < .073$). The authors conclude that "the evidence thus far warrants further study."

This is an acknowledgment (in research reviewers' terminology) that the evidence has merit.

A second acknowledgment was published in the New York Times, op-ed page, June 6, 2000, in the column "Vital Signs" by Eric Nagourney, titled, "A cautious nod to "Distance Healing." Previously, the New York Times was reluctant to acknowledge healing research as valid.

Braud, William and Schlitz, Marilyn. A methodology for the objective study of transpersonal imagery, *Journal of Scientific Exploration* 1989, 3(1), 43-63.

This meta-analysis focuses on electrodermal activity (EDA), a measure of skin resistance that reflects states of tension. Healers have been able to selectively lower and raise EDA, aided by feedback from a meter attached to the healee's skin. In a series of studies by William Braud and Marilyn Schlitz there were 323 sessions with 4 experimenters, 62 influencers and 271 subjects. Of the 15 studies, 6, (40 per cent) produced significant results. Of the 323 sessions, 57 percent were successful ($p = .000023$). That is, such results could have occurred by chance only twenty three times in a million.

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Analyzing 19 experiments in which one person sought to influence another person's electrodermal activity (EDA), they found highly significant effects ($p < .0000007$).

Winstead-Fry, Patricia/ Kijek, Jean, An integrative review and meta-analysis of Therapeutic Touch research, *Alternative Therapies* 1999, 5(6) 59-67.

Out of 29 dissertation and research studies that addressed questions of efficacy, 19 showed at least partial support for the research hypothesis. The other 10 rejected the hypotheses. Deficiencies in reporting details of the studies make it very difficult to compare studies. A moderate combined effect size was found (0.39) in the 13 studies that included means and standard deviations for treatment and control groups ($p < .001$).

Qualitative studies of healing

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Advocates qualitative studies of healing

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