

Expanding the Paradigm in DMILS/HI research: a proposal in four phases

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Objectives

Future investigations into *direct mental interactions with living systems* (DMILS) including studies on “healing intention (HI)” will ideally take place in the context of a collaborative longitudinal research program employing field methods used in anthropology together with advanced brain imaging techniques to permit rigorous examination of “healing” in both naturalistic settings and controlled laboratory conditions. The multidisciplinary research program outlined in this proposal addresses important unresolved conceptual and methodological problems in DMILS/HI research in efforts to clarify the roles of socio-cultural, psychological, biological, spiritual and “energetic” factors in “healing.” The proposed research program will lead to improved theories and research methodologies that will guide future studies on HI and DMILS. As envisioned, a series of field and laboratory studies will examine “healing” in relationship to:

- Select traditional healing approaches as practiced in naturalistic settings
- Traits, attitudes and beliefs of healers, patients and researchers
- Relationship factors influencing outcomes in researcher-healer-subject teams including distance, duration, time displacement (eg, healing “intention” in past or future), differences in attitudes, numbers of healers, patients and researchers, etc
- Environmental factors conducive of (or interfering with) responses to HI
- Quantitative or qualitative methodologies that permit replication of “healing” claims and clarify underlying mechanisms associated with healing in both field and laboratory conditions

The proposed research program will challenge and expand the DMILS/HI research paradigm by:

- Critically examining current explanatory models of consciousness in “healing” in field and laboratory studies on physical, psychological, neurophysiological and Psi phenomena associated with healing
- Stimulating cross-disciplinary dialog and research collaboration in anthropology, medicine, consciousness research and Psi investigations on an integral theory of healing
- Optimizing DMILS/HI research methodologies increasing the quality and uniformity of future studies and enhancing the clinical relevance of findings

- Applying established and emerging technologies to optimize methodologies aimed at obtaining pertinent empirical data on socio-cultural, biological, physical, “energetic,” and informational factors associated with “normal” healing responses and health benefits associated with HI
- Utilizing novel statistical models and methods for analysis of significance, covariance and other measures to more adequately capture and characterize complex factors operating in HI in different healer-patient-researcher-environment configurations

Background

Many theories have been put forward in efforts to explain both indirect and direct effects of “healing intention (HI)”—including prayer and other spiritual practices—on health. Beneficial outcomes are reported almost 60% of the time when HI is employed alone to treat a medical or psychiatric disorder (Astin, Harkness & Ernst 2000). Reviews of the theory and research literature in DMILS and HI are available in Braud (Braud 2003), Jonas & Crawford (Jonas & Crawford 2003) and Watts (Watts 2011). However, research findings to date are limited by serious methodological problems including poor or absent blinding, data omitted from analysis, unreliable outcome measures, rare use of power estimations and confidence intervals, and the absence of independent replication (Jonas & Crawford 2003). Along the same lines, it has been argued that few if any field or laboratory studies on “healing” have adequately simulated or re-created conditions and factors associated with reports of healing in traditional societies (Schlitz 2011). On this basis the significance of research findings on HI from Western-style research studies is questionable. Furthermore, models of “healing” based on these findings may have little or no bearing on human and environmental factors associated with healing.

Treatment approaches used in many non-allopathic traditions including Chinese medicine, Ayurveda, homeopathy, qigong, Reiki (and other forms of “energy healing”) are premised on postulated interactions between putative non-classical forms of energy or information and complex living systems. For example, according to Chinese medical theory “qi” is an elemental energetic principle that cannot be adequately described in the language of contemporary science. Recent research findings suggest that “qi” may have characteristics that are consistent with the predictions of quantum field theory in complex living systems (Chen 2004). Quantum brain dynamics (QBD) is a non-classical model that invokes quantum field theory in efforts to explain observed dynamic characteristics of brain functioning. QBD may eventually help elucidate reports of beneficial effects of “energy healing” on both physical and mental health. It has been suggested that prayer and other forms of healing intention may operate through nonlocal “subtle” energetic or informational interactions between the consciousness of the medical practitioner and the physical body or consciousness of the patient (Zahourek 2004). Above-chance correlations in electrical brain activity between pairs of individuals separated by electromagnetic shielding who are instructed to “communicate” through intention may be consistent with the predictions of QBD or other emerging non-classical theories of consciousness (Schlitz & Braud 1997; Standish

et al 2003). Functional MRI imaging techniques showed a positive correlation between healing intention and changes in brain metabolic activity in patients who were empathically bonded with healers (Achterberg et al 2005). Recently proposed theories of consciousness that invoke quantum-level mechanisms are only beginning to characterize relationships between the quantum level of reality, well described neurobiological and immunological processes, and human consciousness in ways that may permit laboratory studies on these important questions (Koehler 2011).

The research program

The research program will require a coordinated effort over many years between researchers at multiple independent laboratories and take place in four phases. *Phase I* will consist of a comprehensive review of the anthropological, medical and Psi literature on “healing” to identify promising traditional healing practices and gifted healers in addition to specific medical or psychiatric disorders (if any) for which there is evidence for beneficial HI effects. To ensure an adequate “multidisciplinary lens” in future studies on healing, Schlitz has suggested a comprehensive literature review on the following five primary areas (Schlitz 2011):

- Cross-cultural data
- Survey studies
- Public health research
- Basic science related to mind-body medicine
- Basic science and clinical studies of distant healing

Phase II will consist of field studies aimed at observing and documenting instances of “healing” culled from the literature review. Field studies will be conducted by trained investigators in naturalistic conditions employing validated anthropological field research methods (eg, structured interviews of healers and patients, linguistic analysis, video and sound recordings, etc) and measures of physiological or “energetic” factors (eg, serology, EKG, EEG, REG), and other appropriate research methods that can be adapted to field conditions. The field research program will yield observations and ratings of HI “performance” for different healing approaches and unique healers with respect to particular medical or psychiatric illnesses using validated symptom-rating instruments and psychometric scales (see “variables and experimental measures” below). Analysis of Phase II field research findings will generate hypotheses about socio-cultural, psychological, biological, environmental, spiritual or “energetic” factors and relationships between factors when “healing” is reported or observed to take place with respect to particular medical or psychiatric illnesses. In addition, phase II findings will yield hypotheses about “optimal” configurations of socio-cultural, psychological, environmental, “energetic” factors associated with consistent positive “healing” outcomes for particular medical or psychiatric illnesses.

Phase III will consist of additional, more focused field research studies on specific medical or psychiatric illnesses identified as promising candidates in Phase II. Phase II field studies will test hypotheses generated in Phase I concerning “optimal” factors associated with observations of “healing” with respect to specific medical or psychiatric illnesses. As such, Phase II field studies will attempt to independently replicate Phase I findings for particular medical or psychiatric illnesses and characterize “optimal” configurations of researcher-healer-subject-environment factors associated with optimal “healing” outcomes in naturalistic conditions. An important goal of Phase III will be refinement of field research methods for obtaining and validating information on socio-cultural, biological, psychological, environmental and “energetic” factors associated with consistent positive outcomes when HI is used to treat a particular medical or psychiatric disorder. Analysis of Phase III findings will refine Phase II hypotheses about “optimal” healing conditions and configurations (ie, researcher-healer-subject-environment relationships) with respect to select medical or psychiatric illnesses examined in this phase. Phase III data will also lead to improvements in qualitative and quantitative research methods that will be used to design Phase IV studies.

Phase IV will consist of a series of laboratory studies with the goals of replicating findings of naturalistic field studies and further characterizing socio-cultural, biological, psychological, environmental, spiritual or Psi factors associated with optimal “healing” for select medical or psychiatric illnesses. Phase IV will start with a critical literature review of laboratory Psi and HI studies to determine optimal research designs and statistical methods. The literature review will focus on the following questions and goals:

- Comprehensive review of all functional imaging studies (including EEG, fMRI, SPECT, PET, MEG) on Psi or “healing” “HI” or “simulated healing” published to date
- Re-analysis of previous findings with respect to CNS activation/localization, network theory, etc and HI; re-analysis of previous findings with respect to biological/immune markers and HI.
- Was research protocol used able to answer question posed? If not what experimental design or methodology issues may need to be re-assessed?
- Identify theoretical biases and omissions that may have influenced outcomes or interpretation of findings in previous studies
- Critical review of statistical methods used in previous Psi and HI studies (Invite Utts to review research design and recommend statistical methods)
- Develop novel experimental protocols to optimize HI outcomes and data “capture” following methods and findings from Phase III
- Identify emerging theoretical models of Psi and “healing” that may be more consistent with reported outcomes and mechanisms discussed in literature

Phase IV studies will examine different explanatory models of HI under controlled laboratory conditions with the goals of refining methods and protocols used in HI research, further

characterizing promising healing practices used in traditional settings, and replicating HI outcomes for a particular medical or psychiatric disease condition. **Phase IV** studies will focus on select medical or psychiatric disorders for which there are robust findings in Phase II and III. “Gifted” healer-patient pairs identified in Phase II and III will be invited to participate in laboratory studies in environments adapted to simulate optimal healing “conditions” in the naturalistic environment in which healing practices are used in traditional cultural settings. Phase IV will identify research methods and factors conducive of “optimal” healing environments and “successful” healer-subject-researcher configurations. Data gathered in this phase will include select bioassays of immune function and other biological markers specific to the target illness being examined, validated psychometric scales measuring healer, patient and researcher attitudes, beliefs, interactions, and experiences, functional brain imaging methods (including possibly EEG, fMRI, SPECT, MEG), measures of putative informational or “energetic” factors that may be associated with “healing” (eg REG, other machines), and other qualitative and quantitative research methods appropriate for evaluating responses to HI with respect to the target medical or psychiatric disorder. Phase IV findings will further refine hypotheses about socio-cultural, biological, psychological, spiritual and Psi factors associated with “optimal” healing with respect to discrete medical or psychiatric disorders. Important goals of Phase IV include:

- Examining “gifted” healers (ie, individuals who achieve robust or consistently positive HI results in naturalistic environments) in controlled laboratory settings to characterize environmental conditions and healer-subject-researcher factors conducive of optimal “healing” outcomes, and find out whether HI outcomes observed in naturalistic settings can be simulated or replicated in controlled laboratory settings
- Developing disease-specific protocols that simulate (as much as possible) naturalistic factors in controlled laboratory settings to achieve optimal “healing” with respect to specific medical or psychiatric disorders
- Characterizing optimal healer-patient-researcher-environment “configurations” with respect to specific medical or psychiatric disorders

Previous studies on “healing” suggest that multiple human and environmental factors operate when “healing” takes place however the relative contributions of specific factors or relationships between factors have not been clearly established. The proposed research program will characterize mechanisms involved in healing by systematically investigating the following factors:

- *State of healer* before/during/after session (eg: meditative absorption, trance, EEG biofeedback optimizing specific EEG pattern, HeartMath procedures, other Psi-conducive states). These and others can be done in healer only or in both healer/patient pair.

Permutations should include “neutral” state (healer + patient), and all combinations ranging from neutral to highly absorptive/alterd state in both healer + patient.

- *Duration of healing session* and “directed” HI—longer time intervals more closely approximate naturalistic conditions (Compare short (minutes) with longer (10-30 mins) periods of HI especially viz naturalistic field studies on typical duration of traditional healing practices.
- *Receptivity of patient* (compare focused sustained “receptivity”/absorption with psychologically “neutral” state. More ‘successful’ patients may be those capable of entering into and sustaining highly absorptive/trance-like states (permutations include neutral X gifted healer; highly absorptive patient X sham healer, all others)
- *Physiological factors*: serum markers of immune status, inflammation, infection, metabolic markers, other (known markers of specific illness condition in pt targeted by healer)
- *Functional brain data*: fMRI, EEG (QEEG, Loretta?), analysis of co-variance of fMRI, EEG by region/circuit; covariance of fx brain data with peripheral or local (?distant) environmental measures of energy/information that may be related to hypothesized healing “effects,” eg EDA (?presentiment effect eg Braud data); biophoton detectors, other.
- *QM/QF involvement*: MRS/fMRI studies may provide indirect indicators of large-scale coherence possibly consistent with macroscopic QF effect and test for co-variance with EEG, EDA, REG, standard physiological measures, subjective “states” of healer/patient/experimenter.
- *Personality inventories* of healer/pt using validated scales for absorption, dissociative tendencies, limbic activity, etc. Test for covariances between personality traits/states and above-chance objective measures (physiological and fx imaging) and subjective states of pt/healer/experimenter and measures of objective outcomes viz changes in objective (immune/metabolic markers) and subjective (patient symptom rating scales) outcomes.
- *Objective outcomes* of “healing” using blinded raters of symptom change (targeted sx) for select medical/psychiatric condition (verum vs sham patients for a specific disease condition with discrete immune/metabolic markers) See Benor reviews for candidate dz conditions for which consistent findings. Test for covariances btw objective outcomes and subjective reports (patient and healer). Test for covariances btw. Objective and subjective reports and statistically sig. changes in physiol/immune markers, fx imaging data, REG, EDA, etc.
- *Time variable*: importance of relative “timing” of healing intention viz objective or subjective outcomes (compare empathically linked neutral pt and sham patient with select disease conditions). Basic permutations include hrs/days before or after pt. scanned, same time as scan.
- *Location/distance*: What is importance of location of healer and patient; spatial separation btw healer and patient for all permutations (gifted healer X “successful” pt,

etc. Evidence for non-local healing “effects?” Basic permutations would include healer vs sham healer inside scanner room, in control room, outside facility, at least ?one mile away (?healer remains in naturalistic environment).

In **Phase IV** studies careful design of sham healer protocols is critical for clarifying the roles of intention, belief, empathy, distance and time in HI. **Exh A** suggests permutations of healer-patient-researcher relationships in future HI studies. **Exh B** suggests permutations of sham vs verum conditions for healer, patient, researcher and scanner in future HI studies.

Exh A: Healer-patient-researcher configurations in laboratory HI studies

protocol	Healer	Patient	Relationship and controls/variables
I	Gifted	Successful	Pt knows and is “engaged” with (ie, empathically “linked”) to healer, verum healer present
II	Gifted	Successful	Pt doesn’t know she is “engaged” with healer, verum healer present
III	Gifted	Successful	Pt thinks she is “engaged” <i>NO</i> healer present
IV	Gifted	Successful	Pt thinks she is “engaged” sham healer present
V	Gifted	Successful	Pt thinks she is “engaged” verum healer works in past or future

(NOTE: Continue same protocol using different healer skill levels, “non-gifted” patients while varying target disease and examining influence of neutral vs “engaged(empathically linked)” researcher)

Exh B: Sham considerations in DMILS/HI studies

General

- Verum vs sham healer, patient, scanner, experimenter
- Use healers, patients and researchers as their own controls

Healers

- True healer healing intention
- True healer neutral state
- True healer interfering/negative state
- Sham healer healing intention
- Sham healer neutral state
- Sham healer interfering/negative state
- (Same as above with past vs future time displacement added)
- (same as above with positive vs. neutral vs. negative researcher expectation)
- No healer present

Patients

- “Successful” patients have documented hx of beneficial healing “effects” (Phase II and III) with healer in study
- Successful healthy pt in highly absorptive state
- Successful healthy pt in neutral state
- Successful healthy pt in negative state
- Successful ill (discrete disease condition) pt (greater “need” for healing (see Braud here) in absorptive state
- Successful ill pt in neutral state
- Successful ill pt in negative state
- Sham pt in absorptive state
- Sham pt in neutral state
- Sham pt in negative state
- (Same as above but add past vs. future time displacement)
- (Same as above but include verum vs. sham healers)
- (Same as above but include experimenter expectation positive, neutral, negative)

Researcher

- True researcher “believes” in HI efficacy
- True researcher “skeptical” re HI efficacy
- Sham researcher “believes” in HI efficacy
- Sham researcher “skeptical” re HI efficacy

Scanner/EEG/EDA/REG/Other fx measures

- Scanners “on” ? correlations between subjective/objective healing outcomes measures in pt
- Scanners “off” ? effects on subjective/objective healing outcomes measures
- ? Covariances btw experimenter “engagement,” “optimism” and subjective/objective outcomes? Is experimenter expectation/belief as significant a factor as verum vs. true healer, or neutral vs. “successful” patient?
- Other?

Findings from Phase IV studies will help answer the following questions:

- What are effect sizes and significance (if any) of differences in healing outcomes for above permutations in different patient/healer/experimenter/environment configurations?
- Are there consistent co-variances btw different permutations of healers/patients/experimenters/environment for select illness conditions? If so what do observed co-variances imply about relative contributions of healer, patient, experimenter

and environmental factors to “healing” with respect to specific medical/psychiatric disorder?

- What is relative importance of psychological “set”/state of both healer and patient (and experimenter) with respect to subjective and objective outcomes?
- What are relative contributions of duration, distance and temporal factors (see “variables and experimental measures”) to observed differences in subjective/objective outcomes for different patient/healer/experimenter/environment configurations?
- Are there consistent and significant differences in number of runs to achieve statistical significance for major configurations for select illness conditions? (If so this may imply differential “training” capacity by healing technique with respect to discrete medical/psychiatric)

Summary

An interdisciplinary research program on “healing” will yield rigorous uniform methodologies for future field and laboratory studies on healing, contribute to an integral theory of “healing,” help establish and scientifically validate a discipline of “healing” that can be integrated into conventional allopathic and alternative medical practices, lead to improved understanding of unique environmental conditions and healer-patient factors that may be associated with optimal healing outcomes, and examine efficacy claims of specific “healing” techniques addressing particular medical and psychiatric disorders. In addition, the proposed research program will investigate whether healing techniques used in the context of unique cultural settings, traditional healing systems or spiritual beliefs generalize to a human capacity for “healing” across cultures or in controlled laboratory settings. Finally, the proposed research program will ask whether humans can be trained as “more effective” healers and “more successful” patients.

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