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Perception of Conventional Sensory Cues as an Alternative to the Postulated 'Human Energy Field' of Therapeutic Touch

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Abstract

Background--Therapeutic Touch (TT) proponents claim that humans emit a metaphysical "Human Energy Field" (HEF) that TT practitioners can sense and manipulate via their hands even without direct physical contact between practitioner and patient. As evidence, proponents note that TT practitioners commonly report various tactile sensations as they sweep their hands just above their patients bodies. An experiment was conducted to determine if, and under what conditions, human subjects could detect via their hands the presence of a nearby human body that they could not see or touch.

Methods--Twenty-six subjects were tested to determine whether or not they could detect the presence of an investigators unseen hand that was steadied just above one of the subjects hands. Subjects were tested at various distances between hands of subject and investigator and in trials in which various sensory cues were systematically added and removed.

Results--Subjects performed well at three inches between hands, offering correct guesses regarding the location of the investigators unseen hand more than 70 percent of the time. Subjects abilities remained strong at four inches between hands but diminished at 6 inches between hands. Subjects performed no better than chance would predict when body heat was shielded. Subjects who were purposefully miscued by investigators performed significantly worse than subjects who were not miscued.

Conclusions--Participants in Therapeutic Touch sessions may be mistaking conventional sensory cues such as radiated body heat for evidence of a metaphysical phenomenon.

Practitioners of the alternative nursing practice known as Therapeutic Touch (TT) claim that they use their hands to sense and manipulate a metaphysical "Human Energy Field" (HEF) that emanates from their patients. TT practitioners claim that manipulation of the HEF can facilitate physical and psychological healing. Moreover, TT practitioners contend that they can sense and manipulate the HEF without touching their patients. Indeed, TT is typically conducted with the practitioners hand a few inches from the patients body.

Despite this lack of direct physical contact between TT practitioners and

patients, both practitioners and patients often report feeling sensations of warmth and tingling during TT sessions. TT proponents claim that these sensations stem from perception of a special type of energy that cannot be accounted for by conventional science. These sensations are often adduced by TT proponents as evidence of the efficacy of TT and the validity of its metaphysical constructs. For their part, some skeptics suggest that TT practitioners and patients may be merely imagining the sensations of warmth and tingling that are so often reported in TT testimonials. In this view, TT participants are victims of the power of suggestion and their desire to find corroborating evidence for their metaphysical worldview.

This article reports the results of an experiment designed to address these issues. More specifically, our experiment assessed (1) whether or not human subjects can detect, without using sight or touch, the presence of a human hand when the hand is placed just above the subjects hands, and (2) the role that conventional sensory cues such as radiated body heat may play in subjects abilities to detect the presence of a human hand that they cannot see or touch. If If subjects are unable to detect the presence of a nearby human hand when all significant sources of conventional sensory cuing have been eliminated, this would constitute evidence against the claim that humans can sense (or manipulate) a metaphysical HEF.

Background

TT is today among the most commonly utilized alternative health therapies. TT has enjoyed particular success in the nursing community, where it has been embraced by several mainstream nursing organizations and utilized by nurses in many hospitals in North America and around the world (Meehan1998, Rosa et al.1998**)**. TT enjoys frequent and largely favorable coverage in nursing journals and periodicals (Meehan 1998).

The success of TT in terms of the number and prestige of its practitioners has drawn the attention of researchers who have attempted to empirically asses the effectiveness of TT, especially in treating stress, pain, and a variety of mood disturbances. Rosa et al. report that 83 research studies that focus at least in part on TT had been published through 1997 (Rosa et al.1998). As Meehan notes, this research has been inconclusive (Meehan 1998). The relatively few studies to report positive results for TT have been beset with methodological problems. These problems include the lack of control groups, failure to use blind protocols, the use of only a small number of subjects, and an over-reliance on subjects self-reports regarding the effectiveness of TT interventions. Meehan suggests that much of the TT research conducted to date has done too little to control for possible placebo effects (Meehan 1998). In a recent meta-analysis, Peters reports that the many methodological limitations of the existing TT research make it difficult or even impossible to say anything conclusively about the effectiveness of TT (Peters 1999). Earlier literature reviews, such as a report commissioned by the University of Colorado Health Sciences Center (Claman et al.1994), have also noted similar methodological problems and limitations.

Perhaps in frustration with the great methodological difficulties (and high financial costs) associated with TT research that examines health outcomes, some researchers have moved from attempts to assess TTs therapeutic effectiveness to investigations of the TT practitioners avowed ability to sense and manipulate the HEF.

Within the theoretical constructs of TT the HEF is a metaphysical manifestation of the flow of vitalistic life energy through the body. Persons who are ill are said to have deficits, blockages, or imbalances in their vital

energy flow. TT practitioners claim they can use their hands to detect disturbances in the HEF, correct blockages by "unruffling" the field, and correct imbalances by channeling healing energy (Krieger 1992). Again, the HEF is said to be sensed and manipulated without physical contact between practitioner and patient. Practitioners typically move their hands over the patients body at a distance of 2 to 4 inches (Rosa et al 1998), although slightly greater distances are cited by some proponents.

Dolores Krieger, one of the cofounders of TT, notes that TT practitioners almost always describe their perceptions of disturbances in the HEF in one of the following six ways: "heat," "cold," "tingling," "pressure," "electric shocks," or "pulsations." The phrase most often used is "temperature differential" (Krieger 1992). TT proponents do not believe that these sensations are responses to ordinary sensory stimuli. Instead, they maintain that TT participants perceive an energy force that scientific instruments cannot detect and that conventional scientific theories cannot explain. For example, Krieger writes that the terms used by TT practitioners to describe the sensations "indicate a common experience for which we do not as yet have an adequately expressive language" (Krieger 1992). According to Krieger, the sensation of heat "is not the sense of heat one feels when a hot stove is touched or a finger is passed through a flame." Rather, Krieger explains, "Therapeutic Touch deals with a very different aspect or conception of temperature differential than the one we currently understand in biophysics" (Krieger 1993).

To determine whether or not TT practitioners can sense an HEF, Rosa et al. (1998) designed an experiment in which TT practitioners were asked to detect the presence of an unseen human hand that hovered above one of the practitioners hands. Subjects and investigator were seated at a table divided by an opaque partition. Subjects placed their hands through holes in the partition. Twenty-one TT practitioners were tested. In 280 trials, these TT practitioners could correctly identify the hand over which an investigators unseen hand hovered only 44 percent of the time, a rate that is no better than that which would be expected by chance. Ball and Alexander (1998) conducted an experiment in which a single blindfolded TT practitioner was asked to detect the presence or absence of a human body that, when present, was positioned (on a massage table) four inches from the practitioners hands. This practitioner was successful in seven out of ten trials, a success rate that Ball and Alexander deemed insufficient to warrant concluding that the TT practitioner was able to detect HEFs.

The results reported by Rosa et al. (1998) and Ball and Alexander (1998) make sense in terms of science. Given what we know about electromagnetic fields and human physiology, it does indeed seem unlikely that HEFs exist and function in the manner that TT proponents believe them to. But science would also suggest that several sensory cues might be readily available to help humans determine when an unseen human body is in very close proximity. For example, radiant body heat might provide a salient sensory cue. Similarly, rustling of clothing or movements of air caused by even the slightest body movements might provide cues that a body is nearby. In this context, it might seem strange to expect that subjects would fail to perform at better-than-chance rates when asked to discern the presence or absence of an unseen but very close human body.

In order to adequately blind a test of whether or not human hands can detect the HEF of a nearby human body, it is necessary to eliminate any conventional sensory stimuli that could either (1) cue the subjects as to the presence of the body, or (2) miscue the subjects. The experimental apparatuses and procedures themselves may introduce confounding sensory cues. Investigator speech and behavior during experimental protocols may introduce them. Cuing often creeps into experimental protocols in the most surprising and sometimes

seemingly inexplicable ways (Rosenthal 1976). The seeming inevitability of subtle but nonetheless confounding cues such as rustling shirt sleeves and investigator tone of voice have led experimenters in sciences such as medicine, psychology, and sociology to adopt double-blind conditions whenever possible.

We discovered during pilot testing that subjects could seemingly be cued (and miscued) by investigators body movements. For example, subtle sounds associated with the rustling of clothing or paperwork by the investigator were sufficient to cue some test subjects. In addition, some subjects could detect a very slight flow of air onto their hand if the investigators hand was placed over it too rapidly or with a downward movement. Curiously, this slight breeze cued some subjects and miscued others who interpreted the sensation as coolness and therefore selected the wrong (i.e., warmer) hand. Similar subtle but significant cuing and miscuing effects were observed with some test subjects when an air conditioning system was running and the placement of the investigators hand over the subjects hand blocked the flow of air.

Subjects were seemingly cued (and miscued) when the investigator rested an elbow on the experimental table, which turned out to be a common investigator tendency, especially when testing time was lengthy. Subjects displayed an ability to sense the vibrations or slight change in table alignment caused by this practice, and tended to preferentially guess the hand in front of the investigators elbow. This resulted in both cuing and miscuing because the investigators elbow was not always in front of the subjects hand over which the investigators hand was placed.

Subjects were also seemingly cued and miscued when investigators gave a verbal signal (e.g., "okay," "ready") to indicate that their hand was in position. Investigators tended to look at the hand they were holding in place and subjects could seemingly detect the direction from which the audible signal was issued. We found evidence to suggest that investigators could miscue subjects by issuing an audible signal while looking at the wrong hand, as investigators did on occasion.

Rosa et al. (1998) asked subjects to place their palms in an upwards position, a procedure we adopted (even if the palms-upwards position is not typically used in TT practice). However, we discovered that subjects who were asked to keep their palms turned upward often complained of discomfort and reported "tingling," "pulsating," and "electrical" sensations in their hands. Subjects understandably expressed concerns that these sensations might interfere with their ability to detect sensations relevant to the experiment.

In short, there is a danger that experimental designs of this type may introduce sensory cues that threaten the validity of the study. Investigators may intentionally or (more likely) unintentionally introduce confounding sensory cues, and subjects may consciously or unconsciously make use of these cues. Because it is impractical to double-blind such an experiment, it is especially important to rigorously blind the subjects with respect to the investigator. In designing our experiment, we tried to minimize these threats to validity. We also designed our experiment in part to assess the potential role of investigator cuing and miscuing in experimental assessments of TT practitioners.

Methods

Twenty-six subjects were tested under blinded conditions to determine if they could detect the presence of an investigators hand that they could neither see nor touch. Subjects were recruited from among acquaintances of Rebecca Long (the first author of this report). There were thirteen male and thirteen female

subjects, ranging in age from ten to eighty-one years. (A 27th subject was tested but his data were excluded from our analysis because he did not follow the protocol as instructed.) None of the subjects were TT practitioners, and none had ever been treated by a TT practitioner. None had more than a superficial familiarity with TT practices and claims.

The experiment utilized an apparatus very similar to that used by Rosa et al. (1998). Subjects were seated at a table and placed their hands through holes in a large opaque screen. Subjects rested their hands on the table, palms upward. The position of the screen and the placement of holes in the screen were informed by the pilot testing discussed above and designed to minimize physical sensations caused by the awkward hand position. To further minimize potentially confounding hand sensations, care was taken to minimize testing time. Subject comfort was verified before and after each set of experimental trials.

A towel was placed over subjects forearms to prevent them from seeing through the holes in the screen. All reflective surfaces visible to subjects while they were in place for testing were covered to preclude the possibility that subjects would receive visual cues via reflected light. No air conditioning or heating system was run while testing was in progress. Room temperature was 64F during all trials on one of the two days on which subjects were tested; it was 74F during the second day of trials.

Two investigators participated in the experiment. Investigator 1 was Rebecca Steinbach, an eleven- year old female. Investigator 2 was Rebecca Long, a female adult. Another person stood nearby to monitor subject and investigator adherence to experimental protocols and to verify the accuracy of the recorded data. Data were recorded by an individual other than the investigator. This individual was shielded from view of the subjects and operated the LED device utilized in the experiment (described below).

Investigators 1 and 2 each tested a different group of thirteen subjects, one week apart. Each subject underwent ten trials in each of the experimental conditions under which he or she was tested. In each trial, an investigator steadied her hand in place over one of the subjects hands. Whether the investigator placed her hand over the subjects left or right hand was determined in advance using a random number table (odd-numbered integers were associated with the subjects right hand and even-numbered integers with the subjects left hand). To avoid creating air movement, the investigators hand was moved into position over the subjects hand slowly and with a horizontal movement, parallel to the table. Investigators wore clothing that did not rustle. Investigators were not permitted to lean on the table.

To eliminate the possibility of verbal cuing, a red "ready" light was used to signal the subject that the investigators hand was in place. An LED device was also used to signal the investigator regarding whether to place her hand over the subjects left or right hand. The lights used to signal investigators were enclosed in a box that prevented light leakage that might have cued subjects. Pilot testing confirmed that the LEDs generated no light or heat that was detectable by subjects.

Trials were conducted at each of three different distances between the hands of subjects and investigators: three, four, and six inches. Hand distances were measured from the center of the subjects palm to the palm of the investigators hand. A series of colored lines were placed on the investigators side of the partition to help investigators judge where to place their hands.

In addition to varying the distance between hands, we used two additional

experimental manipulations to assess the possible role of conventional sensory cues in subjects guesses. In one set of trials, the possible role of body heat as a sensory cue was evaluated by interposing a thin piece of glass (from a picture frame) between the hands of subject and investigator. The glass was placed three inches above the palm of the subject. The investigators hand was placed on the surface of the glass.

In a separate set of trials, conducted at a distance of six inches between hands, deliberate investigator miscuing was introduced. Instead of using the "ready" light to signal subjects, the investigator spoke the word "okay" while looking in the direction of the *incorrect* hand. At the same time, the investigator gently rested her elbow on the table in front of the incorrect hand.

Although subjects were given no time limits, all made their guesses rather rapidly, and in all cases the sets of 10 trials were completed in less than one minute per set. After testing, each subject was invited to comment about the trials. These comments were recorded, as were all unsolicited comments made by the subjects during the trials.

Results

Subjects were assessed in six different experimental conditions. Subjects could be expected to make correct guesses 50 percent of the time based on chance alone. Results are reported in Table 1, where reported significance levels are based on two-tailed t-tests against the null hypothesis of chance accuracy (five out of ten correct guesses).

Table 1: Mean Correct Subject Guesses

Experimental Condition[a]	**Mean Correct Guesses (Out of 10)**	**Standard Deviation**	***t*(df)**	**Significance**[b]
3 inches[c]	7.62	1.76	5.36 (12)	*p*=.0002
3 inches[d]	7.69	1.32	7.38 (12)	*p*=.0001
4 inches[c]	6.54	1.90	2.92 (12)	*p*=.0128
6 inches[c]	5.77	1.42	1.95 (12)	*p*=.0751
3 inches, with glass barrier[e]	5.20	1.21	0.64 (14)	*p*=.5314
6 inches, with negative cuing[f]	3.90	1.66	-2.09 (9)	*p*=.0660

[a]Inches refers to distance between hands of subjects and investigator
[b]Based on two-tailed t-test against the null hypothesis of chance acuracy
[c]Investigator 1; 13 subjects
[d]Investigator 2; 13 subjects
[e]Investigators 1 and 2; 15 subjects
[f]Investigator 1; 10 subjects

Subjects performed significantly better than chance would predict at distances of 3 and 4 inches between hands. At three inches, subjects tested by Investigator 1 made correct guesses an average of 7.62 times out of 10, with a standard deviation of 1.76 ($t = 5.36$; $df = 12$; $p = .0002$). Subjects tested by Investigator 2 offered correct guesses an average of 7.69 times out of 10, with a a standard deviation of 1.32 ($t = 7.38$; $df = 12$; $p < .0001$). Fifteen of the 26 subjects offered at least 8 out of 10 correct guesses. Three subjects scored a perfect 10 out of 10. No subject guessed incorrectly more than 5 times out of 10. One subject who scored 10 out of 10 was retested and proved able to offer correct guesses 30 out of 30 times (these retesting data are not included in our statistical analyses).

At four inches between hands, subjects made correct guesses an average of 6.54 times out of 10, with a standard deviation of 1.90 ($t = 6.54$; $df = 12$; $p = .0128$). At this distance, 5 of 13 subjects achieved scores of at least 8 out of 10, and one subject scored 10 out of 10.

At six inches between hands, subjects did not perform better than chance would predict, although the results could be interpreted as marginally significant. At this distance, subjects made correct guesses an average of 5.77 times out of 10, with a standard deviation of 1.42 ($t = 5.77$; $df = 12$; $p = .0751$). One subject who scored 8 out of 10 correct guesses at this distance was retested retested and achieved a total score of 27 out of 30 correct guesses (this was the same subject who scored 30 out of 30 at three inches between hands).

When a glass barrier was interposed between the hands of subjects and investigator, subjects performed neither better nor worse than chance would predict, making correct guesses an average of 5.20 times out of 10, with a standard deviation of 1.21 ($t = 0.64$; $df = 14$; $p = .5314$). Fifteen subjects were tested at three inches between hands both with and without the glass barrier. A repeated-measures analysis of variance reveals that these subjects were significantly more likely to offer correct guesses when the glass barrier was not in place ($F = 26.62$; $df = 1,14$; $p < .0001$).

When deliberate miscuing was introduced subjects performed neither better nor worse than chance would predict, although the results could be interpreted as marginally significant. Subjects made correct guesses only 3.90 times out of ten, with a standard deviation of 1.66 ($t = -2.09$; $df = 9$; $p = .0660$). Again, this condition involved a distance of six inches between hands. A repeated-measures analysis of variance indicates that there was a significant difference in subjects abilities to offer correct guesses at 6 inches between the uncued and miscued conditions ($F = 9.875$; $df = 1,9$; $p = .012$). That is, subjects made significantly more successful guesses when deliberate miscuing was absent.

To assess whether or not subjects manifested significantly different results for either one of our two investigators, a between-subjects t-test was conducted on the results obtained at 3 inches between hands (the only distance at which both Investigators 1 and 2 tested subjects). No significant differences were found between results obtained by the two investigators ($t = 0.126$; $df = 24$; $p < .0001$).

To determine if the accuracy of subjects guesses declined as a function of distance between the hands of subjects and investigators, a regression of accuracy on distance was computed, albeit only for Investigator 1 (who was the only investigator to assess subjects at three, four and six inches) and only for her uncued subjects. The resulting equation was:

$$\text{Accuracy} = 9.16 - .58(\text{Distance})$$

The adjusted R-square coefficient for this equation was .14. This coefficient was statistically significant ($t = -2.68$; $df = 37$; $p = .01$). Accuracy does indeed seem to decrease significantly as distance between the hands of subjects and investigators increases.

We next attempted to determine if this negative relationship between distance and accuracy could be modeled using the inverse-square relationship between distance and intensity manifested in many natural phenomena such as gravity, magnetic flux, and radiant heat transfer. Accordingly, an inverse-square of distance was regressed onto accuracy. The resulting equation was:

$$\text{Accuracy} = 5.15 + 22.15(1/\text{Distance}^2)$$

The adjusted R-square coefficient for this equation was .15. This coefficient was statistically significant ($t = 2.83$; $df = 37$; $p = .008$). This equation would predict that perfect accuracy would be obtained at a distance of 2.14 inches between hands and that near-chance accuracy would result at large distances between hands.

In describing the sensations they felt during the trials, most subjects referred to sensations of heat. In fact, "body heat" was the phrase most commonly used by subjects--both during and after the trials--to refer to their perceptions. Many subjects reported that they made their guesses on the basis of a heat differential they perceived between their hands when the "ready" light signaled them. Two subjects reported "tingling" feelings in their palms, but most subjects identified the sensations as heat.

Discussion

The simplest explanation for our findings is that subjects were using radiant body heat to discern the presence of the investigators unseen hand. The experimental protocol was designed to eliminate all salient sources of sensory cuing other than body heat. Subjects abilities to discern the investigators hand where high when the distance between the hands of subject and investigator was small. Subjects abilities diminished as the distance was increased. Regression analysis confirmed that subjects abilities were indeed a function of distance between hands, as would be expected if real energy such as radiant body heat was involved. Subjects performed no better than chance would predict when a piece of glass was interposed between the hands of subject and investigator, a finding that also suggests that body heat was the most salient cue. Finally, in their self-reported accounts of their sensations subjects routinely used the term "body heat" and spoke of discerning heat differentials between their hands when an investigators hand was in place over one of the subjects hands. Both the trial data and subjects self-reports are consistent with the explanation that body heat provided a highly salient and effective cue.

Our subjects manifested substantial variation in individual ability to detect the investigators unseen and untouched hand. Moreover, subjects scores in the test trials were consistent with their self-reported ability to detect body heat. A number of subjects volunteered that they felt body heat at three inches but not at four inches. Others stated that they felt body heat at three and four inches but did not feel body heat at six inches. Some reported that they could distinctly feel body heat at six inches. No subjects reported that they could feel body heat at six inches but not at four inches. And in all cases, subjects guessed more accurately in trials in which they professed to feel body heat than in trials in which they offered no such professions.

Our findings regarding investigator cuing suggest that such cuing can influence

and even potentially contaminate experimental results. We tested the effects of only two sources of cuing: voice signaling and leaning on the table. Future research would be needed to evaluate the effects of other potential sources of investigator cuing or miscuing.

The results reported here would seem consistent with Ball and Alexanders (1998) report in which a single blindfolded subject made correct guesses regarding the presence or absence of human body in seven out of ten attempts. In attempts where a body was present, Ball and Alexander maintained a distance of 4 inches between the body and the subjects hands. The subjects in our experiment made successful guesses an average of 6.54 times out of 10 at a distance of four inches between the hands of subject and investigator.

The results reported here are inconsistent with results reported by Rosa et al. (1998), who report that the TT practitioners they tested could not perform at better-than-chance rates when asked to discern the presence of an investigators hand placed eight to ten centimeters (approximately three to four inches) above one of the subjects hands. Additional research would seem to be required to address these discrepancies and to provide conclusive evidence regarding the abilities of humans to detect nearby but unseen and untouched human bodies.

Conclusion

The results of our experiment provide evidence against the claim that humans can perceive (or manipulate) a metaphysical HEF which emanates from the human body. When salient sources of conventional sensory cuing were eliminated, our experimental subjects could not discern the presence of an unseen human hand.

Our experiment has demonstrated that individuals who are untrained in TT can readily discern the presence of an unseen human hand at the distances at which TT is typically practiced (i.e., three to four inches) when body heat is not shielded. Although TT practitioners may detect an "energy field" of sorts, the most parsimonious explanation is that the "heat-like" sensations perceived by TT practitioners are due to radiant body heat. In addition, our pilot testing suggested conventional explanations for the "tingling," "pulsating," and "electrical " sensations sometimes reported in the TT literature. We found that such sensations may be caused by the hand position used in TT (palms and fingers flattened and stretched), and by the continual back-and-forth movements of the hands. Certainly, our findings suggest that one can readily explain the sensations reported by TT practitioners without recourse to metaphysical theories that invoke unconventional energy fields.

TT proponents may dispute our conclusions because our experimental subjects were not trained TT practitioners. TT proponents may also object that we have not conclusively ruled out the possibility that our subjects were sensing the HEF rather than body heat. Indeed, we do not claim to have definitively falsified the claim that TT practitioners can sense an HEF. However, within the theoretical system of TT, the universal vital energy force of which the HEF is a manifestation is said to transcend matter and to be everywhere. Although glass effectively shields the transmission of radiant body heat, a universal vital energy such as is postulated in TT would presumably penetrate glass just as it penetrates other matter. If the HEF exists and functions as TT proponents claim, then trained TT practitioners should be able to sense the HEF when conventional sensory cues such as body heat have been eliminated. The burden of proof now rests with the practitioners of TT, who must demonstrate an ability to detect the HEF that is distinct from an ability to detect radiant body heat.

Our findings suggest that skeptics should no longer discount the sensory experiences reported in TT testimonials as being entirely the products of wishful thinking or autosuggestion. Rather, the implications of these perceived sensations should be accounted for in future TT research. During TT sessions, participants who have embraced TT may fully expect to sense the HEF and its manipulation. The conventional sensory cues that our research suggests are readily available might then provide TT participants with sensations they interpret as "proof" of the efficacy of TT. This process could likely facilitate a placebo effect among TT patients.

Our findings regarding variation in subjects abilities to sense cues such as body heat also have implications for future research on TT. Perhaps this individual variation accounts for the fact that proponents of TT differ in the hand distances they recommend or utilize for the practice of TT, a fact that has seldom been noted (let alone addressed) in previous research. Researchers should test TT practitioners under conditions (e.g., hand distance) that the TT practitioner feels are optimum. Differences in subjects abilities to detect sensory cues, and the relationship of this ability to distance, should also be accounted for in designing clinical studies that involve comparisons of treatment and control groups.

Finally, the findings reported here regarding investigator cuing and miscuing clearly indicate that TT researchers must be vigilant in identifying and controlling for potential sources of sensory cuing which could confound test results. This caution would apply not only in tests of subjects abilities to detect an unseen human body, but also in clinical studies that utilize "sham" TT as a placebo. Confounding sensory cues may be subtle, and they may or may not be consciously generated or interpreted by participants in experimental protocols. Because of the inherent difficulties in double-blinding TT experiments, it is critical to effectively blind the subjects from cuing by the investigators. Future research on TT must control and account for the many, varied, and often subtle sources of cuing.

We applaud the move toward testing the specific claims of alternative medical practitioners. But as with all new research trajectories, researchers (including the authors of this paper) may have only begun to uncover some of the unanticipated difficulties inherent in research designs and protocols such as ours. Still, this difficult work must continue if we hope to obtain solid evidence regarding the efficacy and validity of alternative medical therapies.

Refererences

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