

*The following article builds on Dr. Green's previous "mechanisms" research focused on static electrical effects measurable with an electrometer, a sensitive voltmeter, in the Copper Wall environment. The present research, a controlled case study of one bioenergy practitioner previously studied by Green, examines EEG synchrony between the bioenergy practitioner and a patient seeking improvement in two long-standing chronic problems. As such, it looks at aspects of the process of healing, but also indicates clinical improvement occurred. A portion of the paper follows, the full paper appears in **Subtle Energies and Energy Medicine** 3,1 (1992), pp. 19-52. [Eds.]*

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EEG AMPLITUDE, BRAIN MAPPING, & SYNCHRONY IN & BETWEEN A BIOENERGY PRACTITIONER & CLIENT DURING HEALING

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ABSTRACT

A controlled case study was conducted with a bioenergy practitioner and a client during a healing experience. Experimental effects were documented with both participants measured simultaneously using a 24-channel digitized EEG evaluations under four experimental and control conditions: relaxation, meditation, healing-at-a-distance, and healing (client present). Clinical observations and/or ratings of each condition were made by both participants

Brain maps of the bioenergy practitioner across conditions indicated the presence of a strong right hemispheric activation pattern compared to the left. High amplitude alpha rhythms (up to 100 uV) were observed in the left and right occiputs, and high amplitude beta and gamma rhythms were also present in die right occiput and in other areas of die right hemisphere during all conditions, but especially during relaxation and meditation. Healing at-a-distance and healing (client present) were associated with high frequency, high amplitude beta and gamma rhythm localized in the right frontal area, together with low amplitude left occipital and central them rhythm.

Intra- and inter-personal synchrony between bipolar electrode pairs was determined for each condition. Beta, alpha, theta, and gamma synchrony in the bioenergy practitioner was higher and less variable than that in the client in all conditions, and was highest and most stable during healing-at-a-distance. Interpersonal synchrony was highest during healing, especially in alpha frequencies between left occipital areas of bioenergy practitioner and client. . .

DISCUSSION

The observed results provide some confirmation of reports by healers of a state of consciousness during the healing process that is different from that seen during relaxation and meditation. Some elements of the bioenergy practitioner's EEG pattern were seen across all tasks, such as the high amplitude occipital alpha rhythms of 100 uV peak-to-peak, an amplitude which to our knowledge has been reported previously only in the classic studies of Kasumatsu and Hirai with experienced Zen meditators, and in that of Anand, China and Singh with yogis.^{1,2} Another common element across all tasks was a right brain activation pattern of a consistency and intensity most unusual in our experience; such a pattern might be expected in association with an integrative (as opposed to analytic) and a spatial (as opposed to sequential) non-verbal pattern-recognizing capability. Finally, the bioenergy practitioner demonstrated consistency in locations and frequency bands showing maximal synchrony across all tasks. These locations and bands of highest synchrony were quite different from those observed in the client, which themselves were also quite consistent across tasks. The consistency of these patterns across tasks and frequency bands suggests that something of more than ephemeral nature is being measured by the index of synchrony.

Some other elements of the bioenergy practitioner's pattern were specific to the healing process and were present both with healing-at-a-distance and while working with the client who was present. These elements included the high amplitude, high frequency pattern seen in the right frontal area (but not the left that might be hypothesized to be associated with nonverbal direction or intentionality of behavior.

Only one of 24 time-series-analysis t-tests was significant at the .05 level, a result that could be accounted for by chance. (One additional t-test of the 24 [Relax/Healing-at-a-Distance] also approached significance at this level.) A factor which could have reduced differences in the time series analyses between relaxation, control conditions and healing conditions was that, by self-report, it was difficult for the practitioner to avoid assuming die states he associates with healing while in the presence of a client with documented physical problems. It is possible that he may already have inadvertently begun to engage in healing activity during the relaxation period, reducing differences between

relaxation and putative healing conditions. From a strictly physiologic standpoint (law of initial values), the high level of synchrony seen within the practitioner during baseline would also likely limit differences between states. That is, there was limited range for increase in synchrony during healing given the high levels observed during the baseline relaxation condition.

While, in the absence of a control group, it cannot be proven that the EEG measures taken during healing, in comparison to baseline and control observations, were not simply the product of passage of time, placebo, or Hawthorne or other nonspecific effects, several factors mitigate against such a conclusion. The client had engaged in an effective relaxation procedure, physiologically monitored thermal, muscle and brainwave biofeedback, over a period of years. The effectiveness of this practice is indicated by the fact that she had successfully brought her blood pressure under control with these procedures, and had avoided the need for kidney dialysis for two years beyond expectations.

The client had also engaged in meditative practice assisted by alpha/theta biofeedback training over more than a year, and had successfully developed a degree of body awareness that allowed her to correctly detect two intestinal blockages due to adhesions days before they could be seen with radiography. In addition, she had had multiple previous treatments without success for abdominal pain, including surgery on three occasions, medications, several hospitalizations for partial blockages, and practice of visualization of intended results during deep relaxation. Similarly, her problem with restless legs had first appeared four years previously, and had been created unsuccessfully over a period of two years with medications as well as by extending the duration of her dialysis treatments. Her improvement in these conditions began immediately at the time of the bioenergy practitioner's work with her, and continued over four months after the session (restless legs) and to the present, nearly a year after the session (abdominal pain).

Nonetheless, we can not evaluate long-term efficacy with these conditions at this point; we only wish to indicate through report of the clinical data that the healing process had face validity—the client did experience an improvement in two difficult-to-treat problems in direct association with the experimental “healing” process. Thus there is preliminary indication that the observed EEG changes were associated with an actual “healing” process.

To the extent that synchrony is a product of simultaneous occurrence of brain rhythms within a particular frequency range, e.g., alpha or theta, it is important to recognize that studies repeatedly examining EEG variables in various populations have reported that no significant changes in alpha and theta occurred over periods of up to three years.^{3,4} Although increased EEG alpha production in accord with instructions has been reported, the level of non-specific changes in alpha has been quite small in contrast to those observed here.^{5,6} In summary, while nonspecific effects cannot be ruled out as contributing factors in these results, it is unlikely that the changes observed are merely the result of such factors.

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