

H. S. DAKIN COMPANY  
3101 WASHINGTON STREET  
SAN FRANCISCO, CA 94115

April 24, 1975

To whom it may concern:

Mr. Dean Kraft of the Foundation for Psycho-Energetic Research, Ltd., of Brooklyn, New York, participated in research and development work with this company during the period April 15 through 24, 1975, for a total of six full days, for which he was paid, at the rate of \$200.00 per day plus travel expenses.

Mr. Kraft's participation in this work resulted in improvements in the design of physiological and physical measuring instruments, and was extremely helpful to us.

Yours sincerely,

A handwritten signature in black ink, appearing to read "Henry S. Dakin". The signature is written in a cursive style with a large, prominent initial "H".

Henry S. Dakin

3101 WASHINGTON STREET  
SAN FRANCISCO, CA 94115

July 6, 1976

TO: Participants in experimental work described in  
PRELIMINARY PHYSICAL MEASUREMENTS OF PSYCHO-  
PHYSICAL ENERGY INTERACTIONS

FROM: R. G. Macdonald, J. L. Hickman, H. S. Dakin

Enclosed is an advance copy of a report describing work in which you participated in April and May, 1975. We would like very much to have your comments and suggested corrections or additions, and enclose a self-addressed envelope for that purpose.

We are submitting a short version of this report as a "research brief" to the Parapsychology Association for its conference in Utrecht, Holland in August.

We hope that we have learned enough from this work and from other experimenters to be able to plan further experiments in the future.

PRELIMINARY PHYSICAL MEASUREMENTS OF  
PSYCHOPHYSICAL ENERGY INTERACTIONS

R. G. Macdonald, J. L. Hickman, H. S. Dakin

July 1, 1976

3101 Washington Street  
San Francisco, CA 94115

## INTRODUCTION

The experiments reported in this paper were conducted as preliminary investigations of certain physical effects seemingly created at will by individuals through as yet unidentified means. The term, psychophysical energy interaction, is offered as a description of such inexplicable phenomena.

Physical effects thought to be associated with psychophysical energy interactions have been described by many investigators. These reported occurrences include unexpected changes in diffusion cloud chamber track and cloud formations (Miller<sup>20</sup>, Miller, Reinhart, and Kern<sup>22</sup>); anomalous electric and magnetic field effects (Adamenko<sup>1-3</sup>, Beal<sup>5</sup>, Dakin<sup>7</sup>, Fodor<sup>13</sup>, Puthoff and Targ<sup>26</sup>, Smith<sup>28</sup>, Ullman<sup>34</sup>); small changes in weight of inorganic objects (Mitchell<sup>23</sup>); differences in infrared absorption in "treated" as compared with "untreated" water samples (Dean<sup>9</sup>, Dean and Brame<sup>10</sup>, Grad<sup>15</sup>, Miller<sup>21</sup>); differences in physiological functioning of "treated" as compared with "untreated" plants, fungi, enzymes and mice (Barry<sup>4</sup>, Grad<sup>15</sup>, Miller<sup>19</sup>, Smith<sup>28</sup>, Vogel<sup>35</sup>, Watkins and Watkins<sup>36</sup>).

Some of the cited investigators used alleged psychic healers as subjects. These were individuals who professed to have abilities to affect changes in the regenerative processes within humans. The techniques employed by such

healers differ from those used in orthodox medicine, and often appear similar to meditative concentration. The use in this report of such words as "healer," "treatment," and their derivatives, is not intended as a value judgment. Rather, such words are the subjects' own and are used due to the lack of an objective vocabulary in this research field.

With psychic healers as subjects we attempted to repeat many of the previously cited experiments with what we considered to be equal or better experimental conditions. In some of these experiments we used high-voltage photographic equipment and electrostatic field measuring instruments designed by author H. D. Some experiments utilized personnel and equipment made available by San Francisco area academic research institutions which prefer to remain anonymous due to the controversial nature of this research.

These latter experiments included magnetic field measurements, cloud chamber observations, object weight comparisons, Raman spectrometry of water samples, observations of effects of healing treatments on certain living organisms, and electroencephalographic examinations of healer-patient combinations.

The experiments were conducted during the months of April and May, 1975. Three widely known alleged healers participated as subjects: Reverend John Scudder (J. S.) of Homewood, Illinois; Mr. Dean Kraft (D. K.) of Brooklyn, New York; and Mrs. Olga Worrall (O. W.) of Baltimore, Maryland.

Occasionally, human volunteers with physical disorders acted as recipients of healers' treatments. Few physiological measurements of the volunteers were recorded in the experiments reported here. Medical supervision of some of the experiments was provided by Gerald G. Jampolsky, M. D. (G. J.), Irving Berg, M. D., and Lee Sannella, M. D. Technical assistance was provided by Steven Pollini and Sandra Marshall, and by staff members of the above mentioned research institutions. Rochelle Kraft and Judy Skutch were also helpful in providing general assistance. This work was supported by contributions from several individuals.

The experiments are presented individually, each followed by a brief discussion.

## ELECTRIC FIELD MEASUREMENTS

For many years researchers have reported unexplained bioelectrical phenomena associated with paranormal experiences. In some cases, there were measurable changes in electric field strength, greater than those usually caused by normal body movements and physiologically generated electrical potentials. These effects have been noted in the presence of alleged psychical mediums, psychic healers, and other such unusual individuals (Adamenko<sup>1,2,3</sup>, Beal<sup>5</sup>, Dakin<sup>7</sup>, Fodor<sup>13</sup>, Ullman<sup>34</sup>).

Attempts were made to repeat some of these measurements with a variety of instruments and to investigate small changes in electric field strength, particularly near the hands of subjects. These instruments included a  $10^{12}$ -ohm input High Impedance Voltmeter (HIVM), a Tektronix oscilloscope with a  $10^9$ -ohm 100X attenuator probe, and a conventional  $10^7$ -ohm input impedance field-effect transistor voltmeter (Dakin<sup>7,8</sup>). A florescent tube was also used, to which were mounted sensing electrodes for detecting electric potentials at the tube surface. A silicon photodiode was also attached to provide analysis of the light produced by electrical excitation of the mercury vapor inside the tube.

The HIVM consists of an electrometer circuit the input of which is connected to a 3½-by-6-inch aluminum sensor plate mounted in a bakelite case with a coaxial cable leading from the electrometer to a bandpass filter (0.1 to 20 Hz) and an oscilloscope, chart recorder, and a voltage-controlled oscillator (producing an audible indication of electric field changes). Since this instrument responds to field changes, in volts per centimeter, it cannot discriminate between voltage variations and position variations of objects. In looking for fields originating from bioelectric potentials, the subject must be as still as possible. Measurements are conducted inside a metal screened enclosure, or Faraday Cage, to minimize the effects of 60-Hz power line and other interference with the measurements (Figure 2).

Preliminary tests with the HIVM showed its extreme sensitivity to movement of any kind and helped identify signal variations associated with heartbeat, breathing, and body movements. Therefore, an experimental procedure was established in an attempt to alleviate such sources of artifacts. The subject's hands rested on a wooden table six to twelve inches below the detector. The subject was requested to move his or her hands, head, fingers, knees, and feet in order to identify the accompanying electric field changes (Figure 3). The subject then sat quietly while baseline measures were recorded and was then asked to enter his or her healing state of consciousness. After a brief practice



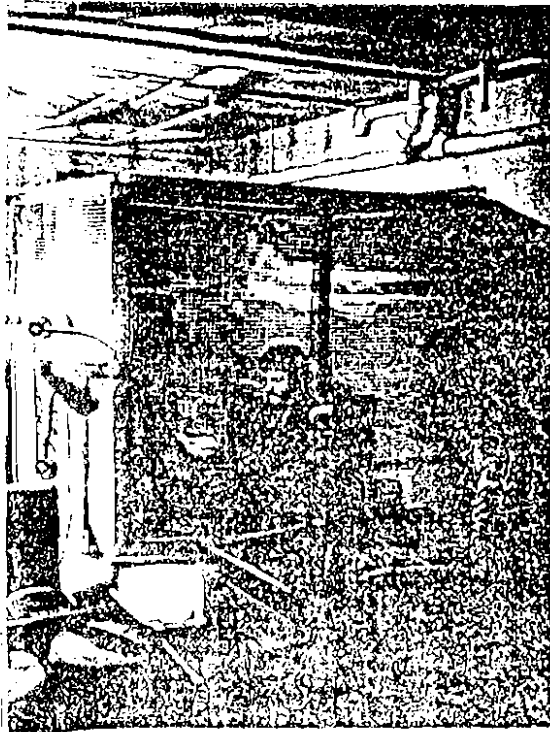


Figure 2. Subject D. K. inside the Faraday cage with the HIVM probe above his hands. A technician is in the foreground operating the video equipment.

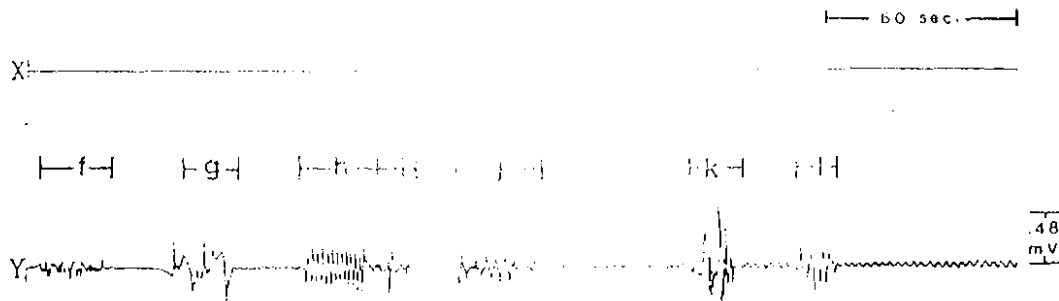


Figure 3. Subject O. W. Electric field variations (Y) produced by various body movements: head turning (f); deep breathing (g); hand twitching (h); head nodding (i); fingers quivering (j); knees clacking (k); and feet tapping (l). The other channel (X) was inactive.

session, random sequences of eight experimental and eight control trials were run. Each trial was forty-five seconds with a fifteen-second rest period between trials.

All data was recorded on chart paper by a Beckman-type RS Dynagraph operating at 125 millimeters per minute. Two channels were used. One channel recorded the electric field signal while the other channel responded to an observer's indication of movement artifact. Frequency-modulated audio feedback was provided for the subject, and all experimental sessions were videotaped.

The first subject (J. S.) stated that he was able to control his "kundalini energy" and send it out of various parts of his body. Electric field changes were recorded near his forehead while he attempted to (in his own words) "build up the kundalini energy field" around his entire body, and to open the chakra, or Kundalini energy center, between his eyebrows. These measurements showed no electric field strength changes, other than those associated with ordinary body movements. J. S. stated that he had not reached the meditative mental state for which he had been striving. He then placed his hands near the sensor plate, and while he attempted to concentrate his "healing energy" near the plate, author J. H. observed field variations much greater than those attributable to hand or body movements. But the chart recorder was not operating at that time, so the unexplained variations did not take place during a formal

experiment and therefore cannot be considered as experimental evidence.

In the final experimental session, J. S. caused a fluorescent tube to light when he held it in his hands. He placed his right hand near one end of the glass tube, holding it securely and stroked it gently with his left thumb and forefinger near the other end. As his finger passed over the glass, a pulse of light traveled from one end of the tube to the other. These pulses were found to be 100 to 300 volts in amplitude, and 0.1 to 0.3 milliseconds in length. Much smaller impulses were produced by control subjects, who were also able to light the fluorescent tube, but only by vigorous rubbing of the glass tube surface. By cleaning the subject's hands with acetone before the lighting attempts, we observed an increase in the light produced within the tube. The acetone dries the skin surface, increasing the strength of the electrostatic interaction between the subject's hands and the fluorescent tube.

D. K. participated in five experimental sessions over a six-day period. Two of the sessions were designated as exploratory, and not recorded. The three sessions for which data was collected consisted of two sixteen-trial sessions and one ten-trial session. During experimental trials, D. K. significantly altered the electric field activity with almost no noticeable hand or body movement. During control trials, there was only one incident of significant electric field

change without accompanying body movement, compared with seventy-five such events during the experimental periods (Figure 4). The observed amplitude and bandpass filter frequency limits were  $\pm 0.006$  volt and 0.1 to 20 Hz, respectively.

O. W. participated in three experimental sessions. Occasionally individual trials were lengthened to accommodate the subject's desires. A large decrease in the amplitude of the electric field measurements was recorded at the onset of some experimental trials (Figure 5). This decrease appears to correlate with a change in her respiration from the control to the experimental trials.

Low-intensity electric field measurements in the frequency range 0.1 to 20 Hz can provide useful and non-invasive qualitative indications of small body movements caused by blood flow, respiration, and voluntary muscle activity. In special cases there seem to be electric field variations which cannot be clearly attributed to either body movements or to outside electrical noise sources. Recent improvements in instrument design and experimental method may lead to more conclusive findings in future experiments.

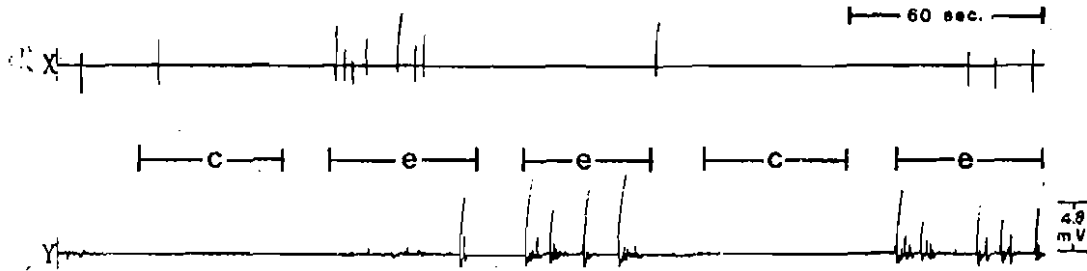


Figure 4. Subject D. K. Electric field variations (Y) in control (c) and experimental (e) trials, accompanied by a record of the subject's movement (X). The relative amplitudes of the movement signals (X) are not significant.

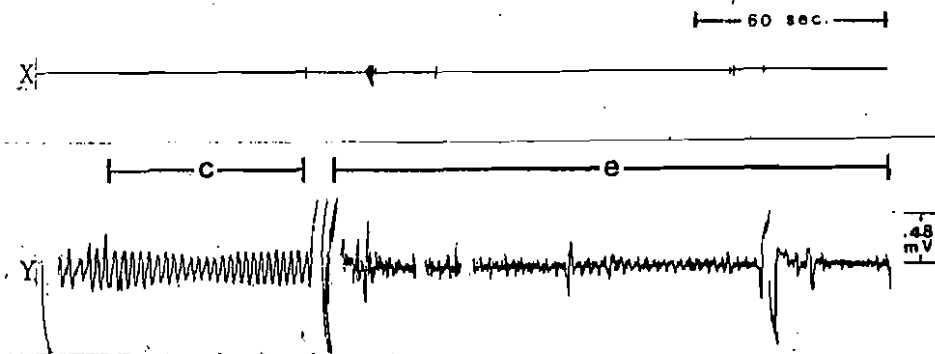


Figure 5. Subject O. W. Electric field variations (Y) in control (c) and experimental (e) trials, accompanied by a record of the subject's movement (X). The relative amplitudes of the movement signals (X) are not significant.

## PLANT GROWTH EXPERIMENTS

Many claims have appeared in popular literature about the interactions among human beings and plants (Loehr<sup>18</sup>, Miller<sup>19</sup>, Tompkins<sup>33</sup>, Vogel<sup>35</sup>). Additionally, Grad<sup>15</sup> has reported significant effects of a healer on the growth rate of plants under controlled conditions. We used Grad's experimental design with two subjects, D. K. and O. W., in our laboratory.

To maintain consistent soil conditions, "Jiffy-7" peat pellets were used. These are sterile compressed pure sphagnum peat. With the addition of water, "Jiffy-7" pellets expand seven times the compressed size. Approximately 1.6 liters of Alhambra purified water was added to thirty-two peat pellets for each experiment. After the peat was thoroughly dry, experimenter R. M. carefully placed five dormant rye grass seeds in each pot with a pair of tweezers. Each seed was placed two centimeters below the surface. The pots were divided into two groups of sixteen and R. M. assigned each group an identifying letter: Q and T for D. K.; A and B for O. W. In a separate room two bottles of sterile normal saline were each assigned a three-digit number chosen from a random number table by experimenter J. H.

J. H. took both bottles into a third room where the subject was seated. He handed one bottle to the subject and placed one bottle on a distant table in the same room. He recorded the bottle numbers on a 3x5-inch card, designating the bottle held by the subject as experimental. J. H. sat in a position to observe the subject and prevent anyone else from entering the room. The subject was instructed to attempt to transmit healing energy to the water. The subject treated the water for about twenty minutes, placed the bottle on a table and left the room.

J. H. carried both bottles to the room where the seeds were planted, placed them near the pots and left the room. After a short interval; R. M. reentered the room and randomly assigned each bottle to one of the two groups of pots. He recorded the designation on a card, eventually hiding the card in an undisclosed place. R. M. then fed each pot ten milliliters of treated or untreated solution. The two bottles were then disposed of and R. M. left the room.

J. H. reentered the room with two round dishes, each divided into sixteen sections and numbered 1-32. With a random number table, J. H. distributed the thirty-two pots among the thirty-two sections and recorded which group designation (A or B, Q or T) was put in each section. He eventually locked the code in a safe until the experiment was completed. For the remaining experimental time, R. M. would enter the room once a day to feed the plants fifteen

milliliters of Alhambra purified water purchased from a local distributor. He also counted the number of sprouted seeds and measured the height of each plant. J. H. had no further contact with the plants.

Three characteristics of plant growth were analyzed: yield (number of sprouted seeds per pot), total height (the total height of all plants in each pot), and mean height (the average height of the plants in each pot). The yield was a set of nonparametric values so the Mann-Whitney U Test (Siegle<sup>20</sup>) was applied. One-tailed t-tests were used to analyze the total and mean heights.

With D. K., there was no difference between the yield of the two groups. However, on most days the total and mean heights of the experimental plants were significantly less than the control group (Table 2). The total and mean heights of the treated group were on the average of 15% and 17% less than the heights of the control group, respectfully.

O. W. also had little influence on the yield. In contrast, the total and mean heights of the experimental plants were often significantly greater than those of the control group (Table 3). The total and mean heights of the treated group were on the average of 27% and 18% greater than the heights of the control group, respectively.

These results lend support to some of the findings reported by Grad and others and suggest the importance of further experimentation. Future investigations might benefit from techniques that allow for quicker and more precise



Table 2.  
Significance Levels of Plant Growth  
Characteristics on Successive Days

Subject D. K.			
Day after planting			
Growth Characteristic	<u>9</u>	<u>10</u>	<u>11</u>
Yield	*	*	*
Total Height	$p < .025$	$p < .05$	*
Mean Height	$p < .01$	$p < .005$	$p < .005$

Note. When significant, growth was inhibited.

\* not significant

Table 3.  
Significance Levels of Plant Growth  
Characteristics on Successive Days

Subject O. W.				
Growth Characteristic	Day after planting			
	<u>15</u>	<u>16</u>	<u>17</u>	<u>18</u>
Yield	*	*	*	*
Total Height	$p < .025$	$p < .025$	$p < .05$	$p < .025$
Mean Height	*	$p < .05$	$p < .025$	$p < .05$

Note. When significant, growth was enhanced.

\* not significant

determinations of plant growth than measurements of length. For example, bean sprouts grow quickly and their volume may be gauged by water displacement.

## HYPERTENSIVE RAT EXPERIMENT

Experiments utilizing animals, such as mice, have provided significant contributions to the study of unorthodox healing. Grad<sup>15</sup> demonstrated that healing of wounds on mice was accelerated through the apparent intervention of a self-proclaimed "healer". Watkins and Watkins<sup>36</sup> have presented well documented research indicating that certain professed "psychics" were able to arouse mice more quickly from ether-induced anesthesia than normally would be expected. Curiously, one of the "talented" individuals apparently inadvertently produced significant negative results over twenty-four trials with the mice.

A local medical research and treatment center provided an opportunity to test the ability of one subject, D. K., to alter the blood pressure of a chronically hypertensive rat. This rat was of a strain bred specifically for hypertension.

A single rat was chosen at random from a group of rats that were not participating in any studies and could be considered as normal for their breed. The rat was isolated and gentled by a laboratory technician experienced in handling this type of rat. The rat was placed in a

restraint enclosure and its blood pressure recorded by a probe attached to its tail. This procedure was conducted out of view of the subject D. K. and the participating experimenters R. M. and G. J. D. K. was next led to the room with the rat and instructed to enter his healing state and attempt to lower the animal's blood pressure. D. K. expressed trepidation and revulsion concerning his proximity to the rat but he proceeded with his attempts to treat the animal. D. K.'s treatment continued for thirty minutes with experimenters R. M. and G. J. observing.

Upon completion of D. K.'s attempts, all participants moved to a separate room. The technician reentered the animal room, took a second blood pressure reading, and discovered that the rat was dead. The experimenters were discretely informed of this unusual result without D. K.'s knowledge. D. K. was questioned about his subjective impressions of the treatment he had just performed. He replied that he did the best he could, though he never lost his distaste for the rat. His only previous contact with rats had been in New York where they are regarded as worthless vermin. When told of the rat's death, he was startled and bewildered and could offer no explanation. The staff of the laboratory were at a similar loss to explain the rat's death. That rat and thousands of others had previously been placed in the same restraint cage with no adverse affects.

The results of this experiment cannot be conclusively interpreted. The experiment stands as a curiosity and a possible reflection of D. K.'s attitude toward his subject.