

DETECTING SUBTLE ENERGIES WITH A PHYSICAL SENSOR ARRAY

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“Someday, after mastering the winds, the waves, the tides and gravity, we shall harness for God the energies of love, and then, for a second time in the history of the world, man will have discovered fire.” – *Pierre Teilhard De Chardin*

ABSTRACT: The notion of a life energy or subtle energy goes back to antiquity. Energy healing, out-of-the-body experiences, and invocations of extraphysical consciousnesses suggest that subtle energies exist that go beyond conventional science. In controlled experiments we explore whether experienced practitioners engaging in such practices can influence novel detectors shielded from conventional energies in a “Sensor Suite,” a customized array of environmental, physiological, and novel subtle energy sensors. The latter were based on the hypothesis that subtle energies could couple to certain physical states and thus could be transduced into electrical signals. We looked for detector responses time-correlated with specific psychoenergetic activities, subject physiological parameters, and subject intent, while monitoring over a dozen sensors simultaneously and continuously using real-time computer data acquisition. Case studies show that plasma-based subtle energy detectors respond best to purported subtle energies. The magnitude of subtle energy detector response appears to correlate with focus, emotional charge, heightened psycho-physiological states, and subject spontaneity. Evidence suggests that it may be independent of distance.

KEYWORDS: Subtle energy; Bioenergy; Biofield; Energy healing; Medium; Psychoenergetic; Intention; Volition; Consciousness; Mind-body; Invocation; Sensors; Detectors; Emotions; Mind-body; Spirituality

INTRODUCTION

Every indigenous culture has a term in its language pertaining to the life energy, also known as 'subtle energy', 'vital force', and 'bioenergy'. From the ancient Orient, *qi* (China), *ki* (Japan), and *prana* (India) are some traditional terms. Bioenergy purportedly flows in the acupuncture meridians and is fundamental

to Oriental medicine, but it is also considered a cosmic energy. Some qigong masters perform phenomenal feats by concentrating this energy, such as bending and breaking metal objects with only light touch, moving heavy objects with little physical effort, and accelerating the growth of cell cultures by projecting *qi* over distances. Such manifestations defy current scientific understanding.

In integrative medicine, bioenergy is considered the basis of healing modalities such as Reiki, Therapeutic Touch, Pranic Healing, and other biofield practices. Since most of these modalities are performed locally, with the practitioner's hands placed on or near the body of the patient, they would appear to follow conventional concepts of energy. Yet some involve the projection of purported bioenergy over great distances. This challenges conventional scientific concepts of energy because of the apparent violation of the inverse square law of field theory, whereby the intensity of radiant energy diminishes as the inverse square of the distance. Moreover, at distances over several hundred miles there is no line of sight and the curvature of planet Earth would constitute a formidable absorber. So, there has been considerable deliberation on whether bioenergy is merely conventional physical energy or completely different.

Early science embraced vitalism, the philosophical principle that life involves a life force beyond conventional science, which some equate with the soul or spirit. However, in 1828 when the first organic chemical, urea, was synthesized in the laboratory from inorganic compounds, this contributed to the "death" of vitalism in science. Nonetheless, over the past two hundred years, numerous scientific researchers have tried to discern a distinct form of energy or "fifth force" associated with life, a putative "subtle energy", beyond the four forces in physics—electromagnetic, gravitational, and the strong and weak nuclear forces. Notable researchers including von Reichenbach, Viktor Schauberger, Wilhelm Reich, and William Tiller, among others, conducted numerous experiments that pointed to a subtle energy although these studies were never accepted by the mainstream.

Subtle energies have been implicated in certain spiritual practices, such as kundalini yoga, and in certain so-called "energy medicine" devices that may emit therapeutic fields undetectable by conventional means. We define "subtle energies" here as energies that have so far eluded detection by conventional

measuring devices of physical science, yet are often claimed to be perceived by sensitive persons and which may have effects that can be profound. Moreover, subtle energies may be associated with the energetic, emotional (astral), or mental bodies, such that there may be multiple types of subtle energies.

Investigations into this realm have been considered taboo by the mainstream, and scientists who dare to study them have often been marginalized. Some of the manifestations of subtle energies challenge the laws of physics. Secondly, peer-reviewed science requires reproducibility regardless of the time, location, and the experimenter, yet reproducibility has been difficult in this area, typically manifesting only as “in kind” as no two experiments can exactly be reproduced at any time or location. Thirdly, some studies bring together science and spirituality that have been historically separated for more than 400 years in the West. Finally, subtle energies challenge the materialistic paradigm of science as they strongly interact with consciousness, through intention, will, and the powers of extraordinary psychoenergetic states. Subtle energies open a window into the multidimensional nature of consciousness and our very existence.

BACKGROUND

Subtle energies have been hypothesized to be among those energies that comprise the biofield, the purported organizing field of life, proposed by some to be centrally involved in bioregulation and biocommunication [1,2,3]. Beneficial biological effects of biofield therapies such as Reiki on cultured cells, bacteria, yeast, plants, animals, and humans have been found by numerous investigators [4]. Among others, Rubik *et al.* have developed microbial bioassays that show measurable beneficial effects from biofield therapies such as Reiki [5], whereby healer-treated bacteria overcome heat shock and grow faster than controls. Numerous studies show that this energy is generally beneficial to life but nonspecific. For example, “healing energies” appear to boost cell growth, division, and motility in cell cultures, and can reduce pain, anxiety and distress in humans. The positive effects tend to be greater for distressed or otherwise compromised living systems. However, bioassays to demonstrate effects of putative subtle energies are laborious and not easily replicated. In some studies, there was insufficient shielding of the experimental setup, so that the causal effect of putative subtle energies cannot be shown conclusively. The parameters

conducive to obtaining subtle energy effects, as well as potential confounders, are not yet well understood. Overall, the results of such studies are considered convoluted and remain unconvincing to the mainstream scientific community.

What is needed is a reliable physical detector for measuring purported subtle energies, for which the measurements might be easily replicated by others, providing irrefutable scientific evidence. In this report, we describe exploratory research to investigate effects of putative subtle energies from energy healers and other practitioners who have cultivated their abilities to engage in extraordinary mind-body states with manipulation of subtle energies. We looked for effects of concentrated subtle energies on physical targets in the laboratory that are completely shielded from conventional energies. Ultimately, our aim is to design and construct a detector that measures subtle energies based on a clearly observable physical effect. Our research was inspired by a discovery of William Tiller [6], who found that some human subjects, through willpower or intention, could lower the breakdown barrier of a gas under strong electric fields.

METHODS AND PROCEDURES

We conducted considerable preparatory research, testing numerous physical targets with various transducing elements as potential detectors for subtle energies, including aqueous systems, electrochemical cells, DNA, chemical reactions, and conventional commercial detectors such as magnetometers, relative humidity indicators, and thermistors. This led to our development of detectors specifically designed to respond to subtle energies. We then engaged human subjects, experienced energy healers, who attempted to influence these target systems by manipulating subtle energies in laboratory sessions.

It is important to measure environmental and physiological parameters concurrent with purported subtle energies, in order to characterize the state of the environment and subject when subtle energies are registered. Parameters that change from day to day, such as ambient conditions or the biorhythms of a healer tend to produce different background patterns in the control data. Therefore we designed and built a customized Sensor Suite (SS), a modular, expandable array of sensors to measure both conventional and unconventional energy fields in tandem to investigate phenomena from physical and

psychoenergetic perspectives. Three categories of sensors were employed: (1) environmental detectors, including thermistors to measure temperature; conductive polymers to measure relative humidity; a fluxgate magnetometer to measure the local magnetic field; radioactivity detectors for airborne alpha, beta, and gamma emissions; and a cosmic ray detector to monitor space weather; (2) peripheral physiological sensors, which measure heart rate (BPM); galvanic skin response (GSR); and perfusion index (PI%, related to the percentage of oxygenated hemoglobin in the capillary blood); (3) subtle energy detectors (SEDs). These are physically isolated—optically, thermally, electromagnetically, electrically, and magnetically shielded, housed in solid copper chambers placed inside steel thermos canisters with thermistors monitoring local temperature, typically within $\pm 0.1^{\circ}\text{C}$ throughout an experiment. Therefore, conventional energies should not affect any shielded SEDs, such that an event that registers a signal change in an SED could be considered a “subtle energy.” In addition to the plasma SED, we also measured the tension of a nylon string SED and the voltage of a chemical cell SED.

The Sensor Suite hardware was connected to a computer running LabVIEW data acquisition Software (Version 10.0). Most sensors and detectors had dedicated analog signal conditioning circuitry followed by analog-to-digital conversion and data pre-processing with dedicated microcontrollers. The digitized data was streamed in real-time via USB bus to the host computer. All detectors were running concomitantly, and data was recorded each second to look for changes and correlations between various detector responses over time. Baseline data was collected for weeks without persons present in the laboratory to ascertain trends due to environmental circadian rhythms and distinguish them from fluctuations due to noise.

Individual subjects came by appointment to perform psychoenergetic practices at the Sensor Suite to investigate the pattern of energies registered under controlled conditions. On occasion we also worked with distant subjects. Figure 1 shows a subject being physiologically monitored with fingertip probes while at the Sensor Suite performing energy healing.

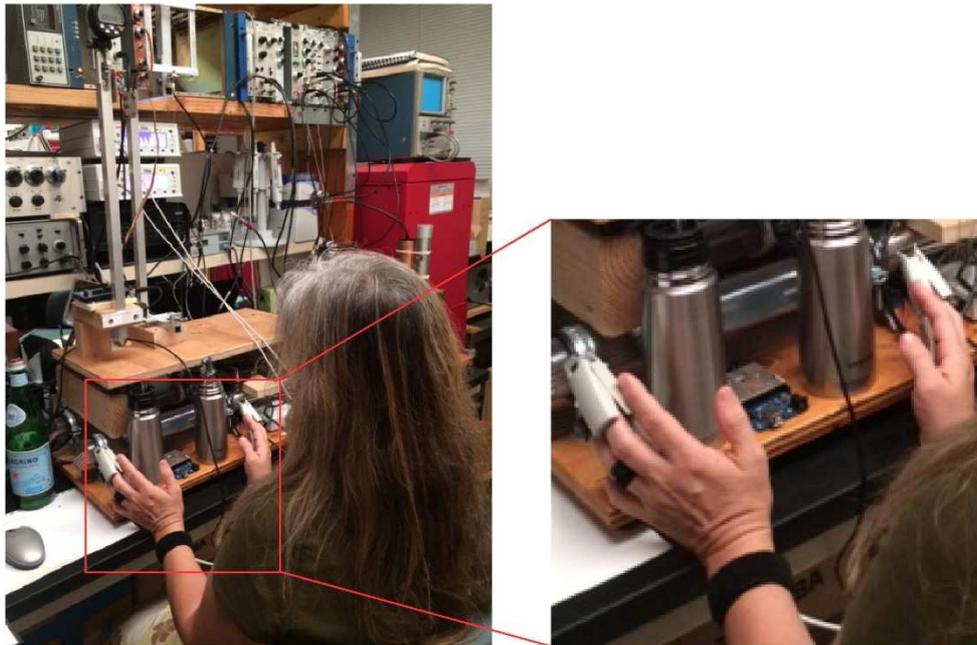


Figure 1. (Left) Healer performing energy treatment at the Sensor Suite. (Right) Detail showing physiological sensors attached to healer's hands placed approximately 10 cm from the steel thermos canisters housing the SEDs.

Research questions addressed in these exploratory studies were as follows:

- Do practitioners emit or concentrate subtle energies during psychoenergetic practices that we may detect with SEDs?
- When human subjects invoke particular extraphysical consciousnesses to manifest subtle energies, does this register on SEDs?

The Sensor Suite recorded concomitant data from environmental, physiological and SEDs in real-time. These data were analyzed for temporal correlations between changes in physiological states, subject intent, and self-expressed thoughts and feelings of the subjects. If the environmental detectors

showed no significant changes during experiments, then temporal correlations between the subjects' stated intentions, physiological measures, and changes in the output of SEDs would indicate an anomalous event that was potentially significant, purportedly registering a change in the level of subtle energies.

Our research protocol with human subjects was typically as follows, involving various control periods (baselines) interspersed with psychoenergetic exercises of predetermined durations. During the session all sensors were continuously recording data in real time at the rate of one measurement per second.

1. Electronic baseline: Measured overnight with no humans in laboratory.
2. Baseline with researchers: Measured on the day of the experiment, with only the two researchers present.
3. Baseline with researchers and subject nearby: Subject arrives, and the exact time is noted. Subject rests for 10 minutes in another room.
4. Baseline with subject at Sensor Suite: Subject is seated near the Sensor Suite for another 10 minutes and asked to remain passive. Physiological sensors are placed on hands of subject to record BPM, GSR, and PI% while subject remains in the resting state seated at the Sensor Suite.
5. Test condition: Subject is asked what exercise or intention she/he would like to perform and engages in this activity for typically 10 minutes.
6. Post-test condition baseline: Subject returns to the resting state for at least 10 minutes.
7. Additional test condition: Subject is asked again what exercise or intention she/he would like to perform and engages in this activity for another typically 10-minute trial.
8. Post-test condition baseline: Subject returns to the resting state for at least 10 minutes.
9. Post-experimental run baseline with subject present: Physiological sensors are detached from subject.
10. Post-experimental baseline without persons present: Subject and researchers depart the experimental room; subject is debriefed to ascertain her/his level of relaxation, inner experiences, and satisfaction with the session.
11. Electronic baseline: Measured overnight with no humans in laboratory.

A diversity of human subjects was studied in experimental sessions over several years. Here we present only highlights of results from three experimental runs with different types of practitioners: (1) two practitioners engaged together in the Vibrational State, a bioenergetic state developed by the International Academy of Consciousness (IAC); (2) an energy healer trained in Russia who maintains a healing practice; and (3) a medium who, from a distance, invoked Archangel Michael (extraphysical consciousness; spiritual being) aiming to manifest photons in a single-photon counting chamber.

RESULTS

IAC PRACTITIONERS ENGAGING IN PSYCHOENERGETIC EXERCISES

The Vibrational State (VS) developed by the IAC is a complex bioenergetic state involving self-mastery of the energetic body. It is achieved by performing voluntary longitudinal oscillations of energy (VELO) in closed circuits of energy. This leads to a coherent stationary wave pattern encompassing the entire energetic body [7,8].

The subjects were a married couple, male and female, 54 and 52, respectively, engaged together at the Sensor Suite (SS). Both subjects were highly experienced IAC practitioners for over 25 years. The only available GSR sensor was placed on the male's non-dominant hand. The two available photoplethysmograph sensors were placed on the non-dominant hand of each subject. Figure 2 shows the response of the magnetometer and the plasma SED. Figures 3 - 6 show data from various SS detectors for this experiment over the same time interval. The behavior of the plasma SED was calm (data not shown) until the subjects entered the SS room.

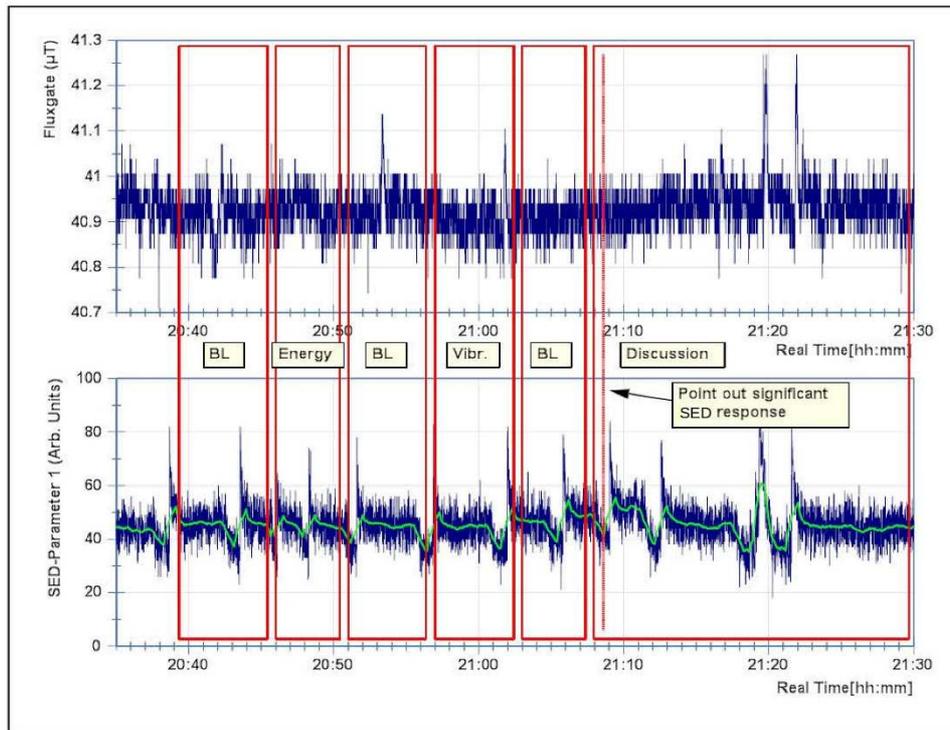


Figure 2. Raw data, November 6, 2015: Ambient magnetic field (upper) and parameter 1 of the plasma SED (lower). The green line in the lower graph is an overlaid 50-point moving average smoothing filter of the raw data. BL= baseline; Energy=energy transmission (extraphysical energy); and Vibr.= Vibrational State.

The annotation of Figures 2 - 6 is identical for comparison and indicates various trials during the session. At 20:10 hrs, we entered the SS room to begin the experiments. The initial baseline period when subjects were physiologically monitored at the SS was a heightened emotional period for all present, which may account in part for the SED response observed from 20:42 onward, and the female subject reported that she was not relaxed. The 2 subjects started sending energy at 19:45. At 20:52, the female subject focused her attention on the plasma SED placing her right hand about 2 feet away from it with intent to send energy. She admitted afterwards when debriefed that there were residual energies still flowing at Baseline 2. At 20:56, the subjects engaged in the

Vibrational State for 5 min. The final baseline starting at 20:02 exhibits a period of distinct quietude shown in Figure 3. Most significantly, at 20:09 the plasma SED registered its largest response within 30 seconds of showing the subjects and three observers the unique response pattern of the plasma SED on the computer monitor during the session.

The data of selected SS detectors are shown in Figures 2 - 6. The raw data were reduced to regions of interest, scaled appropriately and processed by using a 50-point smoothing algorithm to filter signals with large fluctuations. Events of the session are designated as shown.

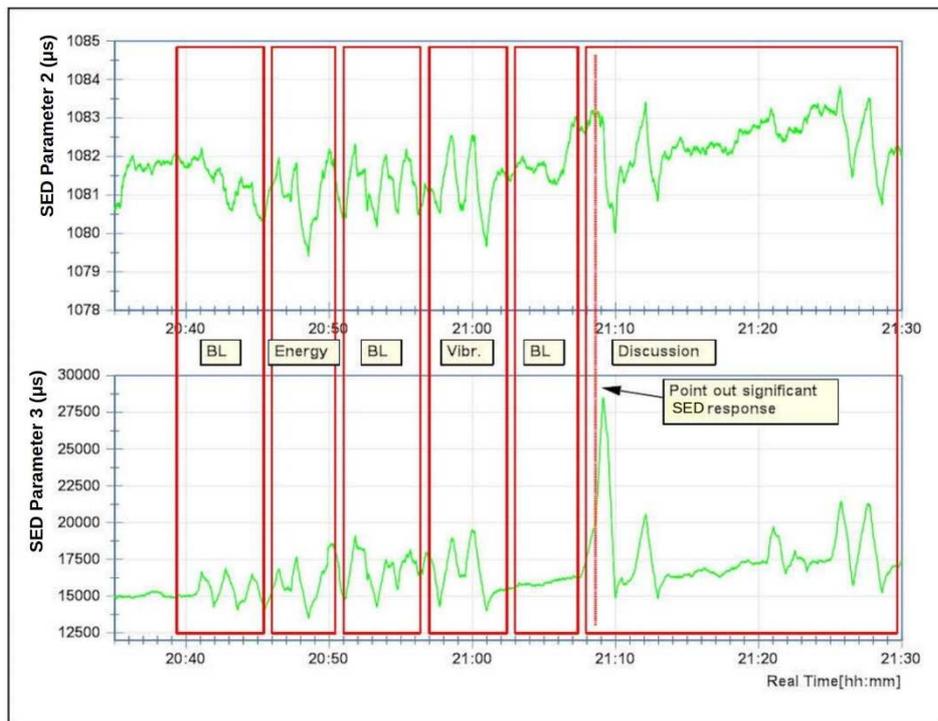


Figure 3. Data, November 6, 2015: Parameters 2 and 3 of the plasma SED. The green lines are 50-point smoothing filters of the raw data (not shown). Annotation and time scales are identical to those in Figure 2 for comparison.

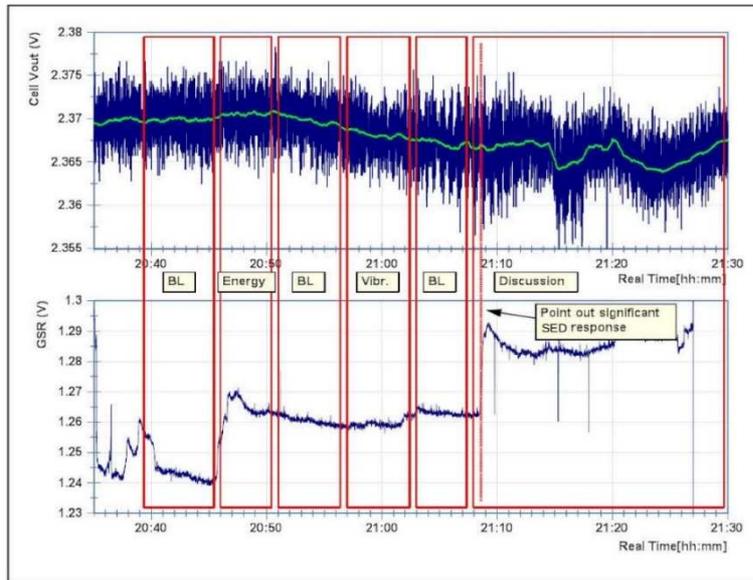


Figure 4. Raw data, November 6, 2015: chemical cell SED and GSR data from male subject's hand. The green line in the upper graph is the 50-point smoothing filter of the raw data.

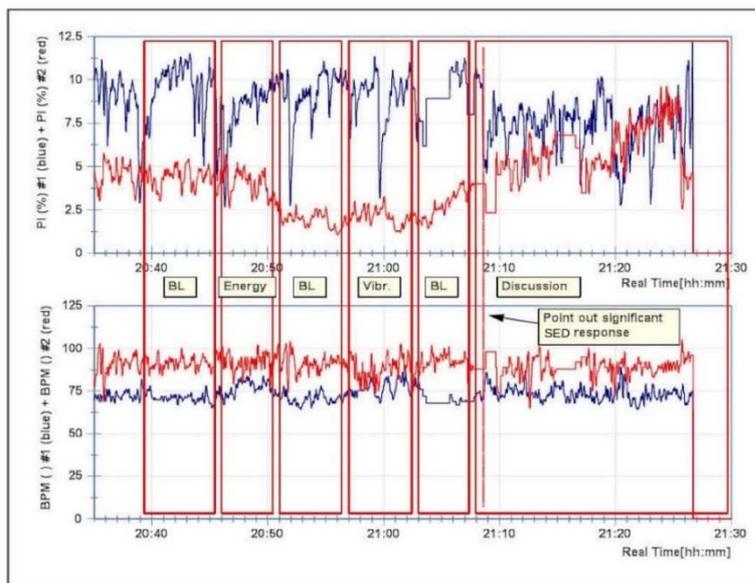


Figure 5. Raw data, November 6, 2015: Tension of nylon string SED and oxygenated

hemoglobin level SpO_2 . Sensor #1 (blue-black) was on the male subject's forefinger while sensor #2 (red) was on the female subject's forefinger.

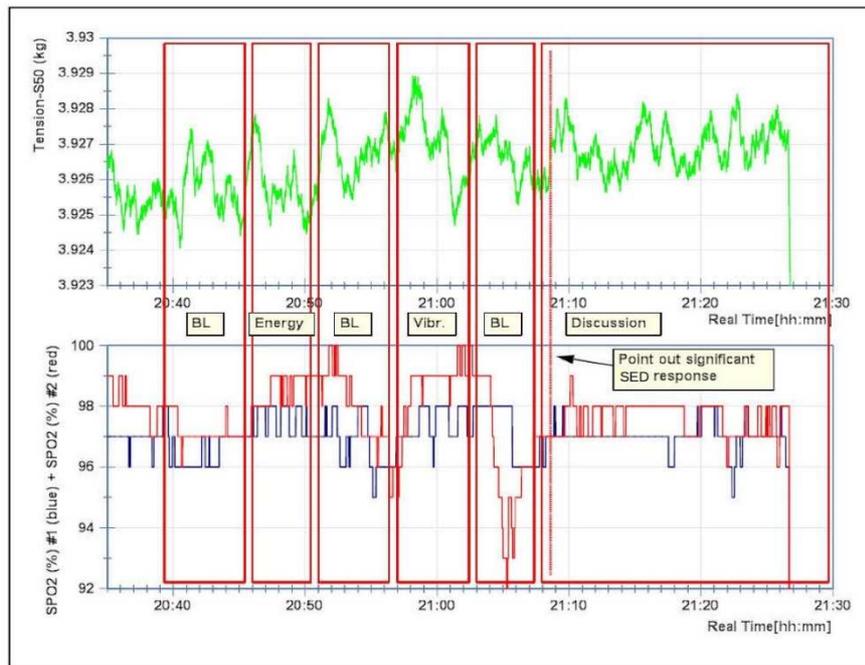


Figure 6. Raw data, November 6, 2015: Perfusion index (PI%) and heart rate (BPM) of the male (blue-black) and female (red) subjects from photoplethysmograph measurements.

Qualitative data (experiential) reported from IAC subjects is as follows. The female subject reported that she could not relax during the first baseline. During the energy transmission, she noted that it faded away before the designated time period ended. “I would guess for the last 30 seconds or so it was less intense. It was stronger between 45 – 90 seconds of starting the energy transmission.” During the second baseline, she reported, “some physical reactions and movement, residual effects from the transmission of energies remained for a long time.” During the VELO exercise and VS, she “reached the VS around half of the time of the 2nd minute or so, more or less.” She “managed to return to VELO after achieving the VS.” After approximately the

middle of the time period, “perhaps around the 3rd or 4th minute, she felt strong synchronization with the male subject’s VELO, which emphasized the VELO flow.” She reported, “There was a residual effect of VELO during baseline 3, which faded away a little because we spoke and opened our eyes. However, I could still feel the effect, which probably faded completely after 2 minutes or so from the start of this baseline period.” The male subject reported that during the VS, “I managed to produce 4 VELOS with 4 VS by their ends. The 2nd and 3rd VS’s were stronger, and during the 3rd one, I felt my partner’s energy field oscillating and synchronizing with mine. Perhaps this was a factor for the VS being stronger. During the end of each of the 3 baseline periods, I got to a somewhat deep disconnection from the world, not sleeping, but close to a theta or delta (brainwave) state. During the last baseline, I felt love, thinking of our pet bird. During the exteriorization of energy period, I kept exteriorizing energy in pulses, with a period of about 3 – 4 seconds. At the beginning it was with my whole body to the whole system (SS), and then it was with my right hand to the SEDs.”

Conclusions from this study are as follows. The plasma SED, initially stable, showed 12 oscillations approximately 20% above baseline that began just before the subjects started to engage in psychoenergetic exercises, possibly when their intent to engage in altered states began. These oscillations ceased when the subjects stopped engaging in energetic states during the final baseline. However, the plasma SED did not cease oscillating during the short resting (baseline) periods in between the subjects’ trial energetic states. This oscillatory behavior of the plasma SED correlates with the male subject’s GSR behavior, too, which increased abruptly about 30 mV during the first energetic state and remained at about the same value during the short baseline periods and throughout his various energetic trials. In other words, the male subject apparently remained in a heightened state of emotion that correlated with the plasma SED oscillations throughout the experiment until both subjects agreed to stop. Then the plasma SED returned to its previously stable behavior. There were no clear correlations between the psychoenergetic exercise periods and the behaviors of the nylon string SED or the chemical cell SED.

The most significant finding occurred just after the final baseline period.

The two subjects and three observers present were eager to learn the results. So, the researchers showed them the raw data of the plasma SED on the monitor while the system was still acquiring data, and within 30 seconds, the largest peak in the plasma SED's behavior occurred, approximately 90% over baseline. Clearly this time-correlated event coincided with the group's excitement and elation over the experimental results. Simultaneously, the male subject's GSR increased another 30 mV above the value obtained during the psychoenergetic states. Because the GSR and the plasma SED are electrically decoupled, i.e., using different data acquisition cards, these temporal correlations in subject physiology and plasma SED behavior are significant. However, we cannot rule out the confounding effect of three observers, who were excited about these results and may have contributed to the effects observed through heightened positive emotions.

This study is preliminary and was designed to look for an effect. Further studies are needed in order to replicate in kind and expand upon these results to understand more about the IAC's psychoenergetics and the SS's performance in assessing subtle energies.

RUSSIAN-SCHOOLED ENERGY HEALER

A male energy healer and yoga teacher, age 45, who was a natural healer since age 9 and who trained at the International Djuna Academy of Alternative Science and Medicine, founded by the renowned healer, Djuna Davitashvili, was studied in a single session. We met him for the first time on the day of the experiment and interviewed him beforehand. Figure 7 shows the entire experimental run of the fluxgate magnetometer and the plasma SED response over 7 hours. Figures 8 and 9 show more detail indicating some temporal correlations of the physiological and SED responses with the subject's periods of energy healing.

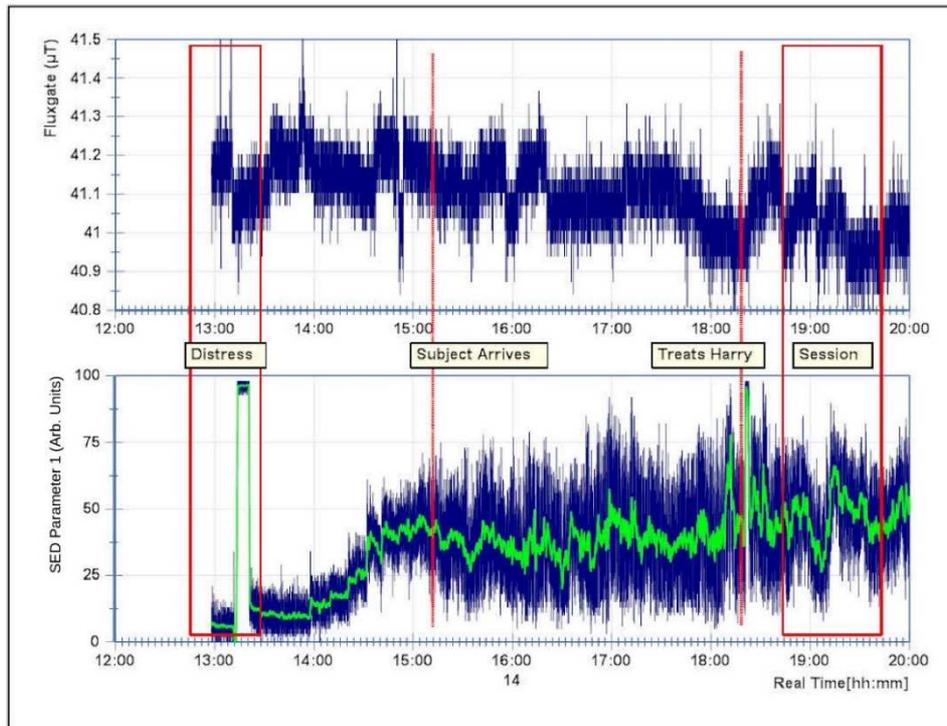


Figure 7. Raw data, December 14, 2015 (full session): ambient magnetic field (upper trace) and parameter 1 of the plasma SED detector (lower trace). Key events with the subject are demarcated with the vertical lines and time boxes.

The subject arrived late and appeared distressed. Later he explained that he had wanted to make a good first impression, and first had trouble finding an appropriate gift (an orchid), and then had difficulty carrying the plant in high wind. Quite possibly the abnormal behavior of the plasma SED before his arrival reflected the subject's distress since all session preparations were routine and quiet that day. During our 3-hour conversation with him in another room our camaraderie and positive mood increased, and the plasma SED response oscillations slowly increased in amplitude as shown. When the subject passionately described his life purpose, this corresponded to a peak in the plasma SED response at 18:13hrs. Later, a large change in the plasma SED parameter was seen when the subject treated one of the researchers (Harry)

with energy healing. The subject passionately suggested the ad hoc healing and immediately performed it, and within a minute the large peak at 18:22hrs resulted. However, later in the session the subject's healing trial at the SS did not show changes in the plasma SED's behavior. The subject reported that he could not connect well with the physical devices, which were too dissimilar from humans.

Figure 8 focuses on the events at the SS during healing sessions on the plasma SED detector and on one of the researchers (Harry) who had an early stage head cold. During the subject's initial energy healing treatment of Harry, performed approximately 2.5 meters away from the SS, the plasma SED changed behavior dramatically. However the plasma SED did not show a change when the subject treated the SS detectors, nor did it change during Harry's second energy treatment by the subject. These data reflect the subject's spontaneous and passionate informal healing at 18:20hrs and the planned but formal, dispassionate energy healing aimed at the SS detectors at 19:22hrs. The nylon string SED showed a small change in tension that correlated with the latter.

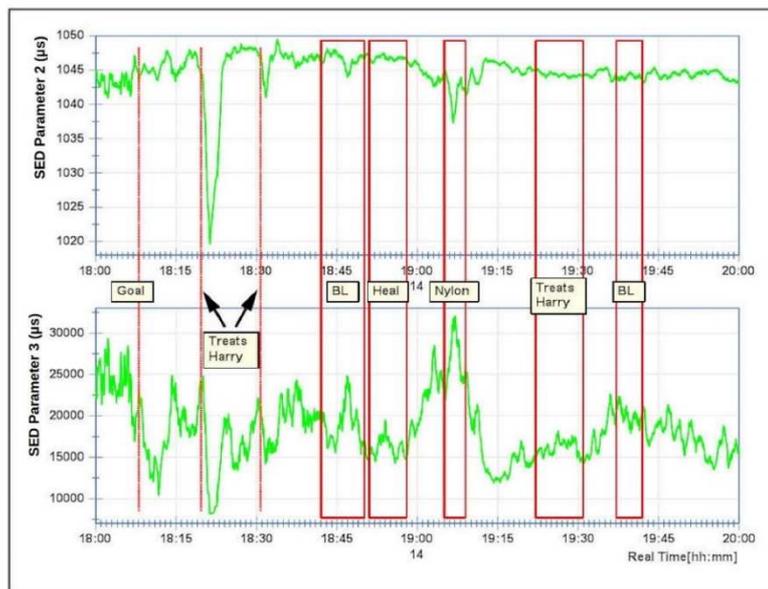


Figure 8. Raw data, December 14, 2015: Parameters 2 and 3 of the plasma SED, shown in the upper and lower traces, respectively. Key events with the subject are demarcated with vertical lines and time boxes.

Figure 9 shows oscillations in the tension of the nylon string SED that correlate with the subject performing energy healing at the SS. However, when the subject later focused specifically on the nylon string to attempt to influence it, its tension was relatively constant, and remained so for the rest of the trial.

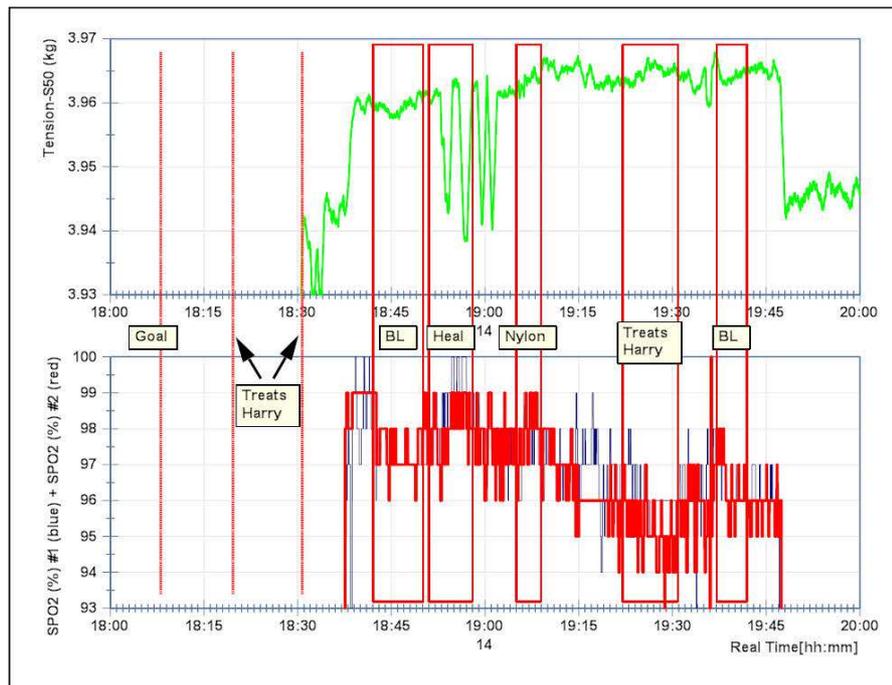


Figure 9. Raw data, December 14, 2015: Nylon string tension and healer's blood oxygenation measured with a photoplethysmographic probe. The probe (red and blue-black) was placed on the right and left forefingers of the subject, respectively. Key events with the subject are demarcated with vertical lines and time boxes.

In concluding, we must consider that the subject had difficulty relating to the SS detectors because he could not assess them energetically as he does treating humans. Nonetheless, we saw changes in the behavior of two detectors—the plasma and the nylon string SEDs—during key activities of the subject at or nearby the SS, especially when he spontaneously and passionately performed his genuine style of energy healing on one of the researchers 2.5 meters from the SS. Oscillatory changes in tension were seen in the nylon string during energy

healing at the SS. Yet his more focused attention with specific energy treatment of the nylon string did not alter its tension.

This was our first experiment with this particular subject, generating significant findings. Further studies to replicate in kind and extend these findings are important.

MEDIUM INVOKING EXTRAPHYSICAL CONSCIOUSNESS TO PRODUCE ENERGY

A female medium, age 44, located 600 km from the laboratory, summoned the spiritual being, Archangel Michael, into our laboratory. This experiment was originally aimed at registering an increased photon count using a photomultiplier tube inside a dark chamber with insignificant results (data not shown). The subject performed 4 trials, each comprised of a 10-minute control period (baseline) followed by a 10-minute invocation period during which she would summon the spiritual being. Real-time communication with the subject to register precise time periods of control and invocation was done via Skype. Analysis of the SS data showed a strong temporal correlation with the invocation time periods. Selected raw and processed data are shown in Figure 10, in which C = control period (baseline) and I = invocation period.

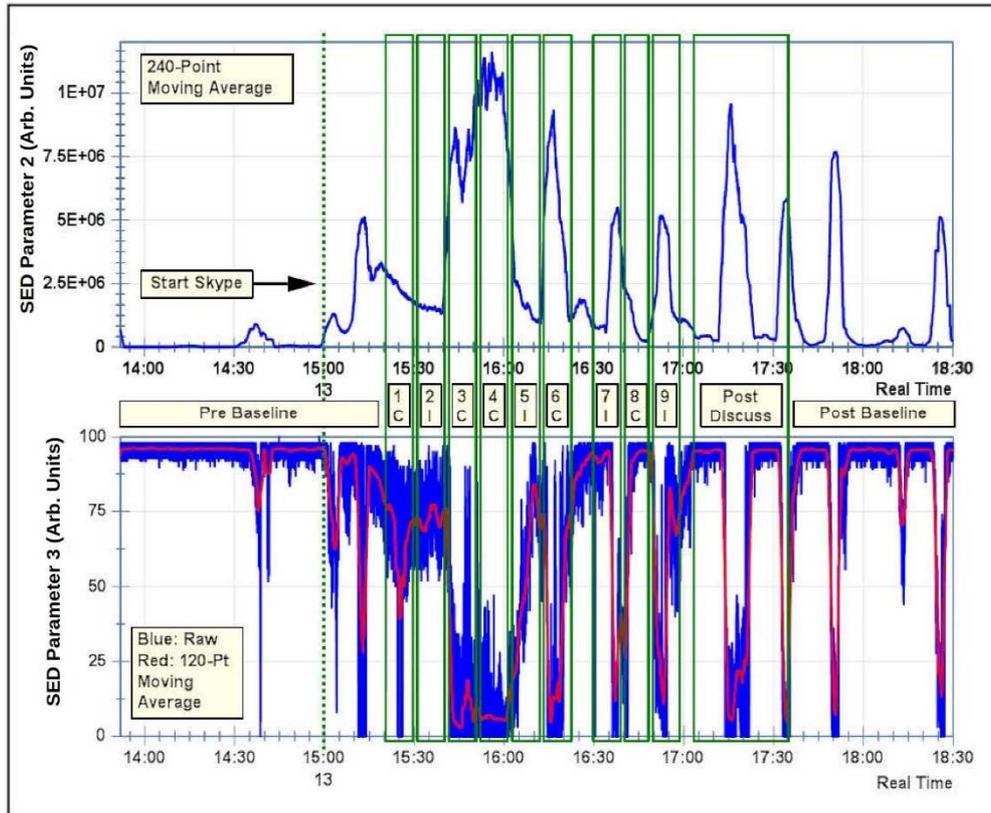


Figure 10. Raw data (lower traces) and processed data (upper trace) of entire session: Parameter 2 response (upper graph) with 240-point moving average; and parameter 3 response (lower trace) with overlaid 120-point moving average (red). Trials are chronologically numbered 1 through 9 with codes C=Control, I=Invocation. Boxes delineate the various time periods of the trials.

Although these data were not statistically analyzed due to the small number of trials, there appears to be a strong correlation between the plasma SED response and invocation, with up to 90% increased response during invocation compared to control periods. The subject, a medium who regularly invoked Archangel Michael, received a “communication” that he was “too big” to enter the confined dark chamber to influence the single photon count measurements. The SS, which was not spatially confined, apparently provided a convenient happenstance detector for subtle energies.

CONCLUSIONS

We investigated various physical detectors to look for subtle energies from a diversity of human subjects that included three cases shown here: (1) psychoenergetic mind-body states; (2) energy healing; and (3) a medium invoking an extraphysical consciousness. Because the effects from subtle energies were expected to be small, we developed sensitive detector systems with computer interfaces for real-time data acquisition and numerical analysis. Environmental and peripheral physiological detectors were also added to look for any temporal correlations between variables. Subtle energy detectors were thermally isolated and shielded such that no conventional energy from humans or the environment should penetrate through these barriers to influence them. We looked for coupled phenomena, whereby two or more separate systems such as physiological parameters and subtle energy detection showed a time correlation, in tandem with subject intent, while we also found that none of the conventional detectors (temperature, humidity, magnetism, and radioactivity) indicated any change in the ambient environment.

We discovered that subtle energies may couple to conventional energy fields in certain physical and chemical quantum states to display complex interactions with such detectors. It is possible that the observed signals are the superposition of several contributing effects, including experimenter effects, interactions with any observers present, as well as efforts by the test subjects. In relation to this, experimenter and observer effects have been demonstrated in psi research studies [9]. However, the effects we observed on the plasma SED are much greater in magnitude, up to 90% changes in parameters, compared to psi research findings that has shown changes, for example, in random number generators influenced by subject intention, which are typically only parts per billion [10]. Moreover, the coupling that we observed between subtle energies and our plasma SED appears to be strongest when spontaneous, genuine efforts are accompanied by strong positive emotions on the part of the persons present.

We looked for measurable changes in our detectors comparing baseline and session trials, which were alternated, which we expected would correlate with the energy flow “off” or “on”, respectively. Initially we expected that subjects could control subtle energies on demand similar to turning a water faucet on and off, and that subtle energies should thus correlate in real-time with subject intent and trial duration. However, we found that this was too simplistic.

Some subjects indicated that there was a delay in the energy flows; furthermore, there was residual energy flow during the baseline (control) periods after any energy trial at the SS. Thus, time delays in switching between the activities with a resulting hysteresis phenomena in the data are important to consider. This also makes data interpretation more difficult.

These were exploratory experiments whose purpose was to look for an effect of subtle energies from a diversity of subjects in various psychoenergetic states on SED detectors that we designed. We found demonstrable effects from three SEDs: a nylon string, a chemical cell, and plasma, which suggest a coupling of subtle energies to solids, liquids, and gases. The SED detectors comprised of these materials showed stratified responses, with the gas-plasma detector having the largest magnitude effects.

A variety of explanations including modifications of physical theory have been offered for subtle energy phenomena. Much more could be written about this, but it is clear that conventional science, *per se*, does not provide any explanation, especially since the scientific paradigm is materialistic and ignores consciousness. Whether willpower and intent can harness energy from the quantum plenum, or whether there is an aether in which consciousness can command the sea of energies, or whether there truly is a fifth force pertinent to life itself, are just a few of the scientific hypotheses that have been proffered. Clearly, there is much more to energy than science has thus far elucidated. The lack of a unified field theory in physics is indicative, too. Science will require revision to embrace the full human potential of consciousness and the multidimensional nature of our existence.

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