

## On the possible mechanism of intent in paranormal phenomena

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**Abstract:** On the basis of current observations regarding modulating variables in parapsychology and remote healing experiments, it is suggested that human intent functions as a variable window of transmission/reception in the exchange of extrasensory information, possibly within the range of ELF electromagnetic frequencies.

**Keywords:** distant healing, psychokinesis, anomalous perception, Schumann resonance, frequency windows, constructive interference, biophoton emission, frequency filter, enhancement of psi functioning

### I. INTRODUCTION

Most of the current literature on anomalous cognition and alternative healing focuses on measurements of physiological correlates (EEG and PET scans, BP, HR, galvanic skin response, etc), prospective mortality/morbidity studies, effect confirmation through the replication of previous experimental protocols and, finally, methodology analysis. Relatively few articles delve into the "deeper mechanics" of such ancient techniques as Qigong and acupuncture-based methods - as for the parapsychology investigations, proposed explanations tend to invoke mainly quantum physics non-locality or the "zero point field" theory and equivalent fundamental particle-level mechanisms (see Laszlo, 1996). While such explanations may finally prove to be correct, they seem, at least for now, somewhat outside the range of possible experimental verification - not to mention outside any significant intuitive understanding.

There is, however, an intermediate explanatory level that has received a fair degree of attention in the last two decades - and that is the level of bioenergetics. In this paper we will review some of the data accumulating within this field, the current working models and hypotheses being proposed as explanations for alternative healing phenomena, and finally some of the more relevant conclusions emerging from the study of anomalous cognition (remote viewing). Two papers in particular, one by Dr. James L. Oschman and the other by James B. Beal (main points summarized below), provide a thorough and enlightening discussion of the current paradigm of bioinformation processing, and are highly recommended.

On the basis of this body of information, we will then argue that the brain translates conscious intent into specific frequency patterns that act as modulators of the Schumann\*

frequency in order to interact non-locally with given targets - identifying, collecting information and, if necessary, inducing specific perturbations into the target system. If the brain is seen as a radar-type transmitter-receiver, intent becomes the "bandwidth", or window of EM frequency, while "focus" leads to a narrowing of this window (hence increased conversion of available energy into signal frequency.) We will also discuss the conditions and possible mechanisms behind these functions, and suggest experimental ideas to further test this hypothesis.

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\* The Schumann resonance is an ELF electromagnetic field produced as a result of lightning discharges which bounce back and forth between the surface of the Earth and the ionosphere, in the so-called Schumann cavity. These waves "propagate with little attenuation around the planet" and have a fundamental resonance frequency in the range of 8Hz.(Grotz)

## II. OBSERVATIONS

As Gloria Alvino (1996) shows in her discussion of the "human energy field" (HEF), the idea of a universal energy as a source of life that can be harnessed and enhanced through special techniques is at least 5000 years old. From ancient yoga exercises and qigong arts, through the "distant actions" discussed by Liebault and Mesmer, to the HEF studies of the last century (Kirlian photography, radionics, HEF light emission experiments, electromagnetic field and bioplasma measurements), man has always been aware of, and tried to identify, these subtle influences on mind and body. Although Western medicine had relatively little to say on the matter for most of this period (and little wonder of that, given its foundation on a "solid" bed of scientific reductionism), the last century has seen a remarkable growth of both interest and technological innovation in this field, and Western science is finally in a position to address the subject in a constructive, analytical manner.

What do we know so far about these subtle therapeutic actions? Some of the more interesting experimental results are listed below (highlights by L.S.):

1. Discussing measurements taken by her team during "laying on of hands" sessions, M. Sue Benford (1999 - 1,2) notes that "**gamma radiation** levels markedly decreased during therapy sessions of 100% of subjects and at every body site tested". She also describes the work of Dr. John Zimmerman who measured (by SQUID and simple magnetometers) **emissions from the hands** of experienced therapeutic touch practitioners, as well as meditators and qigong or yoga practitioners, and found "**large, frequency-**

**pulsing biomagnetic fields, 1000 times greater than the strongest known human biomagnetic field. These emissions were in the range used by research labs to speed up the healing process of certain biological tissues" (2-50Hz).** (also see Oschman, 1997) Similar results were found by Dr. Elmer Green (Beal, 1996), who measured "unexplainable" "body-potential surges of negative polarity ranging from 4 volts to 190 volts" in non-contact therapeutic touch therapists. Tanaka (Tanaka & al., 2001) reports measuring decreased skin temperatures from the "emitting" palm of Qigong masters during external qi emission, while no such temperature changes were noted from the contralateral palm. Conversely, Chen (Chen & al, 2001) reports that "receivers" demonstrated an increase in the palm temperature during the reception intervals, while no such changes were noted outside these "blind" intervals.

2. Beverly Rubik, a leader in the field of bio-electromagnetics research, has described (Rubik, 1993) the work of Russian scientists who showed negative bioinformation being transmitted from one cell culture to another, presumably through **biophoton transfer**. Such biophoton emission have been demonstrated in many species, with a **spectrum ranging from infrared to ultraviolet**, and with injury enhancing the intensity of the light (also see Yanagawa, 2000). She has also described measurements made in England by Dr. Jessel Kenyon, where biophoton emissions **from her subject's hand and forehead** (corresponding to known points of qi emission in external qigong practice) were markedly higher (approx seven times) than emissions from other points of the body (ie abdomen). Nakamura (Nakamura & al, 2000) showed a drop in surface temperature and an increase in biophoton emission intensity from the hands of qigong practitioners during qigong (the correlation between temperature and intensity is usually reversed, suggesting a possible conversion of energy modalities - LS note). Biophoton measurements were also taken by Eugene Wallace using a solid state photon counting device: Wallace found that "more photons were measured" when people "intended to emit more energy" (Rubik, 2000). Finally, Gloria Alvino (1996) mentions studies by Hiroshi Motoyama, who measured low levels of light coming from people who have practiced yoga for many years, and by Dr. Zheng Ronliang, whose research showed that Qigong masters emit some "vital force" with " **a very low fluctuating carrier wave**".

3. Dan Winter (Rubik, 2000) measured the local **geo-magnetic power spectrum** while people were performing "loving meditation" and found it to be **altered by the meditation**.

4. Large predominant **alpha** waves are commonly observed in both masters and trainees during qigong practice, with the amplitude increasing over time as the student advances in training (Kawano, 1999; Kawano, 1998-1; Kawano & al, 1998; Kawano, 1998-2; Terasawa & al, 1997; Kawano & al, 1996; Zhang & al, 1999; Machi, 2001; Zhang & al, 2000; Cohen, 1996)

5. Dr. Kenneth Sancier describes two studies in which there was **observed correlation (synchronization)** between the type and location of **brainwaves** in master and subject during external Qigong (Sancier, 1996). Similar studies were reported by Hirasawa (1996); Kawano (1998-1); Kawano & al. (2000); and Cohen (1996), even when the

subject was blind to the "sending" time interval. Evidence of distant intent **effect on subject's physiological parameters** even in the absence of conscious recognition ("**super-ESP**") has been confirmed in studies by Hokoba Greenberg Ziberbrau (Rubik, 2000); Braud and Schlitz (Delanoy, 1993); Hirasawa & al, 1996 -1&2; Kobayashi & al, 1996; Yamamoto &al, 1996 -1&2 ; Yamamoto & al, 1998; Yamamoto & al, 1997; Tsuda &al, 1999; Kido & al, 2001; Kawano & al, 2001; Kawano, 2000; and Kokubo & al, 2000; Radin, 1997.

6. Both (internal) qigong meditation and Qigong "emissions" applied by experienced masters have been shown to enhance the immune system activity of patients undergoing treatment by enhancing recruitment and phagocytic activity of neutrophils; increasing interleukin-2, suppressor T-cells and CD4/CD8ratio; increased Natural Killer cell activity, modulation of lymphocyte activity and decrease in free radical levels (Kataoka &al, 1997; Higuchi & al, 1997; Higuchi & al, 2000; Park & al, 2000, Cohen 1996)

7. Finally, there is considerable evidence that external qi can alter the molecular structure of treated solutions, affect nucleotide polymerization, protein crystallization and enzyme activity, increase the UV absorption of nucleic acids and catalyze chemical reactions, and alter the radioactive decay rate of a radioactive source by 1 to 12% (Sancier, 1996; Lin and Jiang, 1996). These experiments have been replicated from various locations and the effects were demonstrated even when the separation between subject and target measured thousands of miles (US to China). [Note: Gloria Alvino (1996) also described, among other HEF studies, the early work of Dr. Wilhelm Reich, who built an "accumulator" to concentrate bioenergy and who claimed to "increase the nuclear decay rate of a radioisotope by placing it in his "accumulator" (one has to wonder, however, if the energy, or Qi, was not what was being registered directly by the detector, rather than an accelerated decay rate-LS)].

### III. WORKING MODELS

Reviewing much of the current literature on "healing energy" and bodywork, Oschman (1997) concludes that:

1. Oscillating magnetic "fields emitted from hands of energy therapists [...] appear to 'scan' or 'sweep' through a range of frequencies" , where a "particular frequency, or set of frequencies, stimulate the repair of one or more tissues". These frequencies are in the range of 0.3-30Hz, with most of the activity in the 7-8Hz range - similar to artificial (device-generated) pulses used by medical researchers to stimulate repair processes (see below). Other emissions noted in association with healing are infrared radiation from the hands of Qigong practitioners (associated with increase in cell growth, DNA and protein synthesis, and cell respiration), while it is also noted that living systems have been shown to emit both microwaves and light (biophotons).

2. Researchers are using similar magnetic pulses (especially in the low energy/ELF range) to "jump start repair in a wide spectrum of tissues" (characteristic "frequency windows of specificity" are noted in the article). Such stimulation has included the healing of residual 40-year old wounds, by a mechanism that has been hypothesized to involve the re-opening of bioinformation channels blocked by physical and/or emotional trauma.

3. Within the body, the brain represents a massive source of ELF signals, with these oscillations being transmitted to every innervated tissue via the perineural system. Reciprocally, a "current of injury" is transmitted to the brain from the wounded area as a semiconductor current travelling through the perineural tissue, and which is sensitive to magnetic fields (the Hall effect). This current "is generated at the site of the wound and continues until repair is complete", changing however as the repair progresses, in something akin to feedback of information. The function of this current is to recruit and coordinate immune and structural responses, and to "alert the rest of the body to the location and extent of injury"

4. Oschman's hypothesis is that brainwaves and other natural biorhythms can be "entrained" by stronger external signals (such as emitted Qi and the naturally occurring Schumann resonance), noting the close overlap in frequency profiles, the susceptibility of the brain during thalamic "silent phases", and a large body of research suggesting a strong correlation between behavioral disturbances in humans and periods of geomagnetic field turbulence. Conversely, studies showed that subjects living in isolation from geomagnetic rhythms over long periods of time developed increasing irregularities and chaotic physiological rhythms - which were dramatically restored after the introduction of a very weak 10Hz electrical field! It is also pointed out that one of the effects of meditation is to "quiet the mind" as a method of allowing the "free-run" (or silent thalamic periods) to become entrained by natural geophysical rhythms. This form of "magnetoreception" is mediated by the pineal gland (30% of its cells are magnetically sensitive) and organic magnetite-containing tissues.

5. Expanding on this notion of therapeutic entrainment, Oschman notes the work of Robert Beck, who for a decade researched the brain wave activity of healers from all cultures and religious backgrounds (he enumerates psychics, shamans, dowzers, Christian healers, seers, ESP readers, kahuna, Santeria, wicca practitioners and others) and who, independent of their belief systems, exhibited "nearly identical EEG signatures" during their "healing" moments: a 7.8-8Hz brainwave activity, which lasted from one to several seconds and which was "phase and frequency-synchronized with the earth's geoelectric micropulsations - the Schumann resonance".

He therefore concludes that such regulatory, "healing" signals originating in the brain and the environment are somehow "amplified" within the body, and can then be used for both self-regulation and communication of therapeutic bioinformation to the patient, via the perineural and vascular systems oscillations.

Beal's thesis (Beal, 1996) takes these studies one step further, and looks for a possible substrate to carry this wealth of bioinformation. Reviewing studies done by Dr. Walleczek and his associates, he notes that biosystems' response to electromagnetic fields depend on 1. field frequency 2. field amplitude 3. combination of AC (static) and DC (time-variable) fields 4. internal biodynamic state of the organism 5. the system's capacity for amplification of microphysical field effects 6. the system's capacity to maintain a stable signal (field effect) in the presence of large incoherent perturbations. Noting the exquisite sensitivity ("almost single quantum level") of biosystems to natural and artificial electromagnetic fields, Beal then proposes that liquid crystals (which are an intrinsic part of cell membranes) act as a detector/amplifier/memory storage device for ELF EM patterns in the environment.

Describing a new technique which uses "polarized light to induce molecular alignment with high spatial resolution", he observes that liquid crystals possess "data storage densities of approximately 3 billion bits per square inch". He then proceeds to describe a mechanism whereby proteins, which "tend to orient themselves in the external time-changing, 10-Hz resonant EMF", "would be extremely sensitive to ELF changes in the 10Hz region, in much the same way the eye has evolved to be sensitive to the visible spectrum" (Graf and Cole's "Planetary Resonator Hypothesis").

The second hypothesis he reviews (Hagan and Reid's "Wave interaction as a key determinant of biological structure") "presents evidence that biological forms [...] re-radiate coherent waveforms derived from the environment". As he notes, "a biopolymer may be regarded as being a physical, structural memory of some previous environmental configuration, a memory of a previous wave state of the environment. [...] If this particular wave state has had a part in the original structuring of the biopolymer, then, when it re-radiates energy, it will simulate the wave pattern of the environment."

These models represent a remarkable synthesis, piecing together much of the empirical data that has accumulated in the medical literature over the past century. The relationship between ambient ELF fields and biological function, within a narrow window of functional optimization, has been amply demonstrated. We have also seen that such subtle bioinformation can be manipulated "back toward equilibrium" in order to restore optimal functioning in the event of trauma and disturbances, and that our physiological balance is somehow sensitive to something we know as "intent". The next logical question is: how sensitive, and is it **only** our physiological balance that responds to intent?

#### IV. HYPOTHESIS

What we propose is the following:

1. Over the course of evolution, frequent activation of certain common "states of mind" (such as intense concentration, desire, transpersonal contemplation, religious faith, etc) has resulted in neural pathways (brainwave patterns) that are relatively consistent from individual to individual, and very stable (compared to the routine activity of the brain) - which makes them a suitable foundation for the emergence of resonant, standing waves in the brain (note the phenomenon of "absorption" in meditation, prayer and intense intellectual concentration). Depending on the type of activity, these brain attractors may involve the frontal, limbic, temporal and other areas - however the distinguishing characteristic is that the typical flurry of transient brainwaves seen under normal conditions in the brain gradually gives way to coherent, large-scale activity that results in a resonant, standing wave (entrainment and synchronization). This form of constructive interference, with its intrinsic stability and resulting energy amplification, forms the PRE-REQUISITE, or foundation, for the second stage of entrainment: internal and external bioinformation transfer.

2. As Beal and Oschman have shown, brainwaves (particularly in the alpha range) can be transmitted along the perineural system (or via Frohlich excitation) to any distal parts of the body, and even to adjacent organisms, via ELF EM waves. These frequencies can be amplified by closely-related Schumann resonance waves, or by feedback mechanisms typical of the body's physiological pathways (akin to immunologic and neuroendocrinologic cascades). In turn, these basic frequencies can re-activate stalled healing processes, enhance growth, accelerate immune responses, and generally "jump-start" functions inherent to the body's tissues, by "rebalancing its energies" (according to Oriental medicine) or (in Beal's terminology) by re-configuring the liquid crystal orientation of cell membrane components and thus triggering specific intracellular responses.

**There remains, however, the following question: are such healing/regulating processes NON-SPECIFIC, or do they in fact closely reflect conscious intent? In other words, do we simply trigger a general tune-up/rebalancing process that has positive effects on all types of "injury" present in the body, or do we have the ability, through the exercise of conscious intent, to elicit specific responses from the physical world?**

So far, the evidence emerging out of both parapsychology and alternative medicine studies seems to point rather consistently in the direction of the second hypothesis. For example, anomalous perturbation (RNG) experiments consistently indicate that we have the ability to modestly increase the number of 0s and 1s (or red/green lights) **in the direction of our intent**. (Schmidt, 1987; Schmidt, 1993; Dunne & Jahn, 1992; Jahn & al, 1997). Both Qigong application and simple "concentration" experiments with cell cultures have shown that we can achieve either accelerated culture growth or death, and influence the rate of bacterial and plant mutagenesis in the direction dictated by intent (Yount, 2000; Dossey, 2001; Chow & McGee, 1994). Dr. Dan Benor describes a study conducted by Solfvin (Benor, 1999) in which the rates of healing in mice were affected in a statistically significant way by handlers' expectations, "in the direction of the induced expectancy". And finally, there is anecdotal, but growing evidence (Norris -1,2;

Rossman) that the specifics of visualization in therapeutic guided imagery have a significant role in the magnitude of the achieved effect (although the problem could be attributed to the first phase of the process - ie arguing that more complex imagery tends to activate too many associative areas in the brain and thus that a single standing wave becomes more difficult to achieve, "diluting" the energy available for coherent body signal entrainment).

But if such specificity is indeed the case, how can we explain it?

The answer we propose is based on another puzzle - that is target analysis in remote viewing experiments.

Typically, such experiments consist of a subject being given a particular detail about the target (i.e. geographical coordinates, descriptive location or another target demarcation, called an "address") and asked (usually in a very restrictive protocol format) to provide further information about it. In the classical approach (Gaenir, 1998), the first phase of the analysis focuses on signal acquisition (major gestalt, or impression of the site, including physical consistency and contour); this is followed by stage II (sensory data), stage III (mobility and dimensionals, such as orientation, angularity, space/volume, and mass); stage IV (aesthetic and emotional impact, tangibles, intangible aspects associated with the site, analytic interpretation and complex dimensionals); stage V (subliminal "emanations"); and VI (relative temporal and spatial dimensions and 3-dimensional modeling). This structured, graduated approach cannot be overemphasized, and "graduation" from one stage to the next requires thorough control over previous stages' protocol. Approached in this manner, remote viewing has been shown to be a learnable skill (up to 80% accuracy), with a gradual proficiency curve and a plateau of performance being achieved for each stage. (Targ & Ktra, 1998 Gaenir, 1998)

Numerous studies have also demonstrated (Targ & Ktra, 1998) that size of the target (down to 1mm square) and distance from it (up to 10,000 miles) do not appear to significantly impair signal perception; that electromagnetic shielding by Faraday cage or sea water does not negatively impact remote viewing ability (Note: this type of shielding does not block out ELF waves - Rubik, 2000; Grotz ); and that periods of low geomagnetic field activity actually seem to enhance remote viewing performance.

But how can we even begin to think about the mechanics of this process? Since this does not appear to be an anomaly reserved for those special individuals who can boast "out-of-body" experiences, or similar "powers", how can it be that even subjects with relatively little or no training in altered states of consciousness can demonstrate some degree of success at a task so incompatible with our standard understanding of locality?

Perhaps, we speculated, this has something to do with the nonlocal character and nearly-instant communication intrinsic to ELF waves - more specifically the Schumann resonance. As early as the 1890's, Dr. Nikola Tesla observed that the Earth and its surrounding atmosphere could be considered as a conducting sphere which could support large electrical charges. He was the first to notice (in 1899) the existence of stationary

waves in the Schumann cavity, and he later showed (in his Colorado Springs experiments) that "a pulse emitted from his laboratory" took 0.08484 seconds "to propagate to the opposite side of the planet and to return" (Grotz). This represents (according to Corum and Aidinejad) "the coherence time of the Earth cavity resonator system". It has been persuasively argued by the above authors that Tesla was working on methods for "power transmission and transmission of intelligible messages to any point on the globe". Modern studies have looked into these claims and support the idea that "wireless propagation of electrical power is possible" by resonantly exciting the Schumann cavity. Since the loss of power has been estimated to be about 6% per round trip, if the same amount of power is delivered by the transmitter on each cycle of the reflected wave, "there will be a net energy gain which will result in a net voltage, or amplitude increase", with the process continuing as long as energy is delivered to the cavity (Grotz).

3. In light of all of the above observations, we are proposing that the Schumann resonance may be the substrate for a radar-type extrasensory perception mechanism common to all living beings: like water bouncing off of rocks and other submerged objects, this non-specific frequency is absorbed and re-radiated in unique interference patterns by all objects it encounters; this interference pattern is a composite of external and internal properties, as the constituent atoms, molecules and their global assembly all re-transmit this energy according to their specific configurations (see Beal on biopolymers). **Not only that, but the "sounding" wave can be frequency and pattern (Wallaczek) - modulated by conscious intent in order to yield specific information (interference patterns), which are then decoded by the brain as they return almost instantly on the "back" of the Schumann resonance.** Once recaptured, the patterns are then decoded by the brain in a Fourier-type transformation and the information translated into conscious data, much like other sensory processing. Conversely, specific effects may be imprinted as bioinformation and made to exercise a "mysterious action at a distance", once the signal wave reaches the target.

In effect, what we are describing is simply an "extrasensory" interactive interface for organisms too small to have the luxury of a sensory system! In the course of evolution, it makes sense to wonder how unicellular organisms evolved to interact with their environment, how basic functions such as "scan"/"evaluate" (encountered objects), or "fight"/"assimilate"/"phagocytose" (potential food sources), or "stimulate" (own metabolism) - would have to be accounted for. In the absence of what we consider our basic sensory equipment, could we conceive of a more effective mechanism for information processing than such a non-local, energy-efficient electromagnetic "hologram"? (And if that is indeed the case - how ironic that we now call this "primitive", pre-sensory function our higher, future species potential!)

But how specifically is the target recognized? And how do we modulate the sounding wave?

Regarding the latter question, we believe that **essentially all conscious concepts (objects, processes, emotions, etc) are embedded in memory as characteristic brainwave patterns. Anything in the physical world that we are ABLE to recognize is recognizable as a particular energy pattern in the brain.** Therefore, specifying a target "address" or asking questions about specific characteristics (ie color, texture, density, etc) in the context of a remote viewing experiment means simply that we are activating certain neural wave patterns/basins in a manner that is "syntactically" correct for the recognition and imprinting of such information. That pattern, in turn, **may**, under the right ("pre-requisite") global conditions, avoid routine dissipation and become instead coupled to the dominating ("state-of-consciousness") standing wave that is picked up and carried by the Schumann resonance. Needless to say, a similar process is responsible for remote healing and anomalous perturbation "specific intents", where one can assume that such intended actions end up falling into a rather limited number of basic categories/characteristic brainwave frequency windows. (In this context, it is interesting to note Dean Radin's observation that computer crashes happen more frequently in the presence of people who are highly anxious about their work performance and who do not place much value on what they are doing! Another scenario that might receive support from this concept of involuntary neural pattern activation/transmission is the popular wisdom which claims that people who obsessively fear certain diseases or events end up "attracting" those situations to themselves.)

With respect to the first question, on the other hand, so many possibilities remain to be tested that all we can offer are very general directions of thought. For instance, it is conceivable that all targets in the path of the signal frequency which possess the required address characteristic will "retransmit" the sounding (signal) frequency in a mirror-image, or another type of typical complementary wave pattern which interferes constructively with the original signal, creating an amplifying resonance which is recognizable by the brain after a number of prompt-return cycles - the "locking-in" moment. Since the signal is supposedly carried around the globe as a modulation of the Schumann resonance, such scanning and the ensuing standing wave "signal line" (to use RV terminology) could happen in a matter of seconds or minutes - one can speculate that a threshold resonant energy needs to be achieved before the brain recognizes this return signature. As the session progresses, the increasingly greater available energy accounts for the increasing "resolution" and the "flood of information" that is often reported in such advanced sessions.

But how specific is the target address? In a typical RV scenario, a coordinate or general location description is given, while remote healers and forensic viewers often seem to work with pictures, birthdates and associated objects (Targ, 2000; Jaegers, 2000; Jaegers, 1999). Are these elements sufficient to uniquely designate a target? Similarly, we can wonder about the specificity of a remote diagnosis or remote healing treatment on the basis of a patient's name, age, condition and general location - is it inconceivable that a "wrong" patient could be identified? (Interesting enough in this context are accounts of remote viewing sessions where the designated target was missed, but there were additional objects at the given location that were correctly identified; also, of ganzfeld experiments where the subjects' response included data from the entire target pool, rather

than the designated image!) It appears, therefore, that this component of the ESP system is not as highly differentiated - which may ultimately have represented enough of an evolutionary disadvantage to stimulate the development of the more specialized sensory mechanisms we are so familiar with.

Alternatively, it could be that a certain kind of "entanglement" might take place among those involved in the experiment - a case in point being "coordinate remote viewing", where it is hard to argue the cognitive recognition value of a pair of coordinate points to the "naive" viewer - unless the prompting signal becomes entangled with (picks up information from) that of someone who knows the significance of the site.

## V. IMPLICATIONS AND QUESTIONS FOR FUTURE STUDY

Over the past several decades many studies of "anomalous phenomena" have attempted to correlate brain imaging data with psi performance. Beyond the ubiquitous observation of alpha (and occasionally theta) wave predominance in deep meditative states, little else has emerged that appears to offer a common basis of empirical knowledge in this field. Mapping the activation sequence of different functional areas in the brain may eventually lead to significant insights, but for the moment too little is known about this to spawn theoretical bridges toward other areas of psi research. Listed below are some alternative directions for experimental study:

1. What we would like to suggest is that it may be worthwhile to focus more attention on the known energy-focusing points of the body (i.e. Laogong hand points - Chow & McGee, 1994) and try to correlate these emissions to psi performance. In other words, it may be worth constructing a working hypothesis whereby the body "filters" brain noise (secondary brainwave signals that don't possess the required threshold amplitude), so that only the "central", reinforced intent signature reaches the Laogong point. This could then be measured as biophoton emissions and analysed in terms of frequency profile (frequency range and amplitude), and correlated with observed PK effects (such as the Zimmerman frequency windows of specificity). Entire databases could be assembled correlating such frequency signatures with various types of visualization techniques in order to see whether (as empirically suggested) some types of imagery produce more pronounced effects (more "pure" signals?). If so, one may even envision a day when simple electronic devices will assist patients as feedback instruments in controlling the effectiveness of their healing visualization technique.

2. How can we learn to recognize whether a system is responding to our intent? If indeed such a response leads to a characteristic constructive interference (resonance) with the original signal, how can we learn to detect it? (There are indeed obscure references in

the "psychic" literature - Slate, 1997 - that "with experience, [one] will learn to sense when the message has been received").

One way to build such subjective experience would be through immediate feedback in simple (RNG, dice throwing) PK experiments (as Tart has shown, the importance of immediate feedback in the development of the learning curve cannot be overemphasized (Tart, 1966). Alternatively, one could run variations on the Braud-Schlitz shielded (blind) DMILS experiments, only this time have the sender signal when they "think" the subject received the message, and compare this to the timing of the subject's subconscious physiological response (BP, HR, GSR changes). If Laogong point biophoton emissions are measured from sender and receiver at the time of emission/subconscious physiological response/when sender "feels" the signal has been received, such hypothesized signal amplification effect might receive experimental support.

One other potentially relevant observation concerning this hypothesized resonance is the electrodermal screening system (EDSS) behavior during so-called "medicine testing" (Tsuei, 1995). Conceived first by Voll in the 1970s, this simple electronic device has been shown to predict with remarkable accuracy whether reagents placed in the vicinity of the patient will improve, worsen, or have no effect on the diagnosed condition. The theoretical assumption behind EDSS is explained below:

"If system function is normal there will be electrical equilibrium between the EDSD generated voltage and the system. There will be no ID (initial drop in voltage - L.S.). On the other hand, if the system cannot maintain equilibrium, resistance will increase and there will be an ID. During medicine testing, it is the informational energy in the reagent that causes equilibrium to be established, thus abolishing the ID".

This method has been "shown to be effective in testing herbal and allopathic drugs [...], and is successful in testing for allergy [...], the presence of environmental xenobiotics like insecticides [...] and the effect of biologically active substances." (Tsuei, 1995). If such types of bioinformation complementarity can be detected through such relatively simple instruments, one can only speculate about the potential relationships that future "subtle energies" measurements will reveal.

3. The contemporary premise of PK studies is that focused intent can be used like a fine probability perturbation instrument, tipping the balance of possible macroscopic event outcomes in the desired direction by influencing reality at the level of quantum probabilities ("the way the cookie crumbles"). The question that next comes to mind is - is there a correlation between the the amount of time/energy required to achieve a desired effect and the complexity of the system under study? If more complex systems represent more entropy (more degrees of freedom), the logical assumption would be that the amount of "work" (energy-wise) required to align these different "points of probability" with the desired "resultant vector" would have to be greater (i.e. longer application of qigong or alternative PK technique). One simple experiment we propose is to gradually increase the number of dice being rolled at one time, or the number of RNGs in the

sample sets (i.e. increase the number of independent variables representing equivalent "units of chance") and correlate this with the biophoton emission profile and emission time required for an equivalent effect size. [Note that one need not be aware of the individual (quantum-level) outcomes required, instead intent can be seen as a magnetic field globally driving the alignment of an entire array of previously disordered "compass needles" (quantum level behaviors). This comes back to the idea of healing energies as re-opening the channels of communication for synergistic behavior - but perhaps the concept ought to be extended to communication outside the body (or, to use the Gaia paradigm, to viewing PK interactions between individuals and physical objects as no different from bodily bio-communications (between neural and motor systems, for example), with specific frequency profiles corresponding to our familiar action potentials.]

4. Do Qigong and other non-touch healing techniques involve conversion of one type of energy, or energy frequency, into another? (see Benford studies for a very interesting discussion on the observed decrease in gamma radiation levels during such healing sessions, and her proposed mechanism for "ionizing radiation as an alternative cellular energy source"). Measuring baseline and "active PK" energy spectra around both subject and target is likely to yield many clues about the questions raised in this paper, and the importance of studies such as these cannot be overemphasized.

5. Considering that energy attenuation due to atmospheric absorption reduces the efficiency of coupling to the Schumann resonance (Grotz), it would be interesting to see whether psi experiments demonstrate increased effect size and replicability at higher altitudes. Similar studies have been carried out by Persinger (see Mishlove), who, noting that ELF waves "are easier to transmit from west to east", surveyed the ESP literature and found that indeed there was a "slight tendency for the telepathic agent to be west of the percipient rather to the east." It would be interesting to try replicating such results in both anomalous cognition and PK protocols, as this might provide supportive evidence that ELF waves are indeed involved in a common mechanism for these phenomena.

## VI. CONCLUSION

This paper presented a general review of the current knowledge regarding remote perception and bioinformation exchange, particularly as researched in the context of remote viewing and non-touch healing. It is our deep conviction that such non-local phenomena have a common explanatory basis, and therefore that a more sustained effort should be made for designing studies which incorporate the empirical knowledge and technology of both parapsychology and alternative medicine. Also, in light of the considerable role that long-range ELF waves and the Schumann resonance seem to play in this area, it would be advisable to seek more involvement from the engineering community in such future studies - after all, we may be looking at a potential revolution in human communication methods.

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