

White Paper #XXIX

Towards an Orthodox Science that Meaningfully Integrates with Psychotherapy & the Healing Arts

by

William A Tiller, Ph.D.

(Professor Emeritus, Stanford University, Dept of Materials Science & Engineering)

Introduction

This topic has four parts:

- (A) Some problems with today's orthodox science and medicine,
- (B) Some solutions via psychoenergetic science,
- (C) Some important bridging factors and
- (D) Five key interactive components re psychotherapy and the healing arts.

A - Some problems with today's orthodox science

Orthodox science, and thus also orthodox medicine, presently hold at least five major beliefs:

- (1) Mathematically, all true science findings must be internally self-consistent with each other via a distance-time-only reference frame (RF);
- (2) No human qualities of consciousness, intention, emotion, mind or spirit can significantly influence a well-designed target experiment in physical reality (thought to be first proposed by Descartes in ~1600 AD);
- (3) Nothing with physical mass can travel at or faster than the velocity of electromagnetic (EM) light through physical vacuum
- (4) Today's quantum mechanics (QM) can be meaningfully applied to **any** phenomenon of nature and
- (5) The "big bang" creation of our physical cosmos grew out of a completely empty physical vacuum.

In terms of belief #1, ~150 years of serious experimental observations of **anomalous** human cognition and **anomalous** human forces have been found to be **not** internally self-consistent with

orthodox science and thus have been conveniently **ignored** and “swept under the rug” by the orthodox science and medical communities.

Our standard model of orthodox physics involves the four fundamental forces of gravity, electromagnetism, the short-range nuclear force and the long-range nuclear forces and are fully consistent with belief #2. These have led to long-range forces that decay with respect to distance from atoms, molecules, planets and stars. However, modern-day research at the Princeton Engineering Anomalies Research (PEAR) laboratory, which **is** internally self-consistent with that found by many other researchers around the world and over many, many years **is not** internally self-consistent with the orthodox standard model and its independence of human consciousness⁽¹⁾. What is also very striking about these “anomalies” research finding is that human consciousness is non-local and **independent** of distance and time. They **do not** appear to be dependent in any causal fashion upon the physical brain.

In terms of belief #2, about a decade ago this was seriously tested via four carefully designed, different, target experiments via four different specific intentions, one for each target experiment, imprinted into an intention host device (IHD) and placed about a foot away from its continuously running companion target experiment. The experimental results of these four experiments⁽¹⁾ were robustly successful in proving that, in today’s world, this orthodox physical belief is very, very wrong! Some details of these experiments will be shared in section 2.

For belief #3, Einstein’s theory of relativistic mechanics is a great creative triumph; however, it is cast in a distance-time-only RF with no adjacent higher-dimensional domains into which mass-type substance might “tunnel” completely and avoid the v-c barrier (see section 2). Further, the theoretical work of Terletsii⁽²⁾ has shown that the relativistic mechanics (RM) equations can be solved in the superluminal velocity domain just as they can in the subluminal domain.

For belief #4, in today’s quantum mechanics (QM), the wave function for electrons in atoms are generally calculated via Schroedinger’s wave equation which is a second-order partial differential equation in distance and time. It does a beautiful mathematical job for problems that are limited to distance and time. That is, with regard to humans, **it can**, in principal, deal with the electromagnetic (EM) “meat” of human bodies but **not at all** with the higher order capabilities of humans like consciousness, intentions, emotions, mind, etc. Thus, in its present form, it is unable to deal with human capabilities like psychotherapy and the healing arts which involve these higher order human capabilities.

Julian Schwinger, along with Feinman and Tomanaga, shared a Nobel Prize for their discovery and mathematical development of quantum electrodynamics (QED). Schwinger had a Ph.D. student, Paul Werbos who made the prophetic point⁽³⁾ that (1) all forms of QED: Copenhagen, Bohmian, Schwinger-type or Werbos-type yield the same kinds of predictions and **none of them** can explain “remote viewing”. Further, (2) he tells us that the world has spent billions of dollars to use QED in the military to see things very far away and it has failed to do so. The point, here, is that our present formulation of QM, as great as it is, is totally inadequate to encompass the effects of human consciousness into our orthodox science worldview. Thus, it is time to formulate a **larger** perspective or scientific RF for viewing

nature that **both** accounts for **all** the old experimental data and also provides the possibility of quantitatively accounting for the new data in an internally self-consistent way.

Turning, now, to belief #5, about 50 years ago, astrophysicist John Wheeler theoretically predicted⁽⁴⁾ that, for QM and RM to be internally self-consistent, the physical vacuum must contain a latent energy density of 10^{94} gm per cc of equivalent EM energy ($\Delta E = 1 \cdot c^2$). This would mean that the calculated energy stored within the physical vacuum volume of a single hydrogen atom contains about a trillion times that of all the EM energy stored in all the stars, planets and cosmic dust of our entire physical cosmos (a sphere of radius ~ 15 billion light years). This is totally inconsistent with the “empty space” assumption of the big bang.

An empty physical vacuum assumption, is fully consistent with the experimental observations that (a) the physical vacuum is transparent to EM light and (b) that EM photons of **all frequencies** travel with constant velocity, c , through physical vacuum of whatever length. From this, one can deduce that physical vacuum is **a non-dispersive medium** for EM waves which, in turn, means that EM light is not interacting with **anything** that might exist in the physical vacuum. The big bang modelers assumed that this meant the physical vacuum was “empty”. However, an equally plausible assumption is that the “stuff” John Wheeler postulated to reside in the physical vacuum all travels at velocities **faster than c** so that this “stuff” can easily get out of the way of EM photons traveling at $v < c$.

Also about 50 years ago, Eisberg^(5,6) showed that, if one considers the DeBroglie particle/pilot wave concept of the 1920's, and for which he won a Nobel Prize ($\lambda = h/p$ and $v = E/h$ where λ =wave length, v =frequency, h =Planck's constant, p =particle momentum and E =energy) and one also uses a relativistic particle energy ($E = [c^2 p^2 + (m_0 c^2)^2]^{1/2}$ where m_0 =rest mass of the particle), one finds that $v_p = v_g$ where v_g = the velocity of the wave group **and** that $v_{pw} = v\lambda$ so that $v_{pw}v_g = c^2$ (see Figure 1). Thus, since v_p is always **less** than c , v_g is always **less** than c and the pilot wave velocity v_{pw} is always **greater** than c .

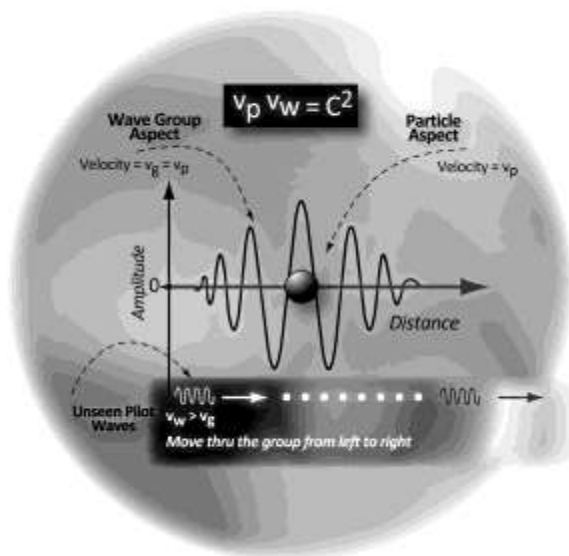


Figure 1. Schematic of true pilot waves.

Since our average, present human sensory system and all of our EM measurement systems have subluminal limits at $v=c$, this means that the v_{pw} of DeBroglie, to be properly counted mathematically, must be treated as a mathematically **imaginary** entity from a **subluminal measurement perspective**. This fact will have great relevance in Part (4).

The orthodox science community don't like this v_{pw} conclusion and prefer to say that the medium through which the DeBroglie pilot wave travels is a **dispersive** medium wherein an anomalous absorption process operates. However, such an anomalous process **could not operate** in the physical vacuum because an EM wave travels at velocity, c , **independent** of frequency, so, at best, an absorption process could work well only at one frequency, not at all frequencies.

To close this section, let us consider the Higg's Boson predicted to give mass to **all** the fundamental particles of today's orthodox physics particle menagerie. It is thought to have been discovered in June, 2012, at Cern in Geneva with a formation energy of ~ 125 BeV. For me, I assume that this forms a key type of **closure** for today's orthodox physics which has created all the instruments whose EM signals travel at $v < c$. Thus, with all of the foregoing discussion, it appears as if the "standard model" and the "big bang theory", both dealing with $v < c$ phenomena, are complete - a great achievement! However, it also means that, although natural phenomena in the $v > c$ domain are open to legitimate scientific investigation, our orthodox science community presently has **no tools** available for such studies!

B – Some solutions via psychoenergetic science

This term "psychoenergetics" was first created in Russia by Russian scientists to keep their Soviet masters happy that they were doing meaningful and practical work. Here, we use it to seriously test the Descartes assumption in today's world.

Step I: Experimentally disproving the Descartes assumption

For the past 35 to 40 years, in parallel with my traditional science research and teaching at Stanford University, I have been seriously investigating the effects of human intention on both the properties of materials (inorganic and organic; non-living and living) and on what we call physical reality (outside the university).

From this research, my colleagues and I have discovered that it is possible to make a significant change in the properties of a material substance by consciously holding a clear intention to do so. For example, we have repeatedly been able to change the acid/alkaline balance (pH) in a vessel of water either up or down, by creating a specific intention to do so without adding chemicals to the water. In addition, this pH-measuring system we developed has provided us with a very good way to measure the subtle energy content of a space. (Subtle energies are defined as **all those** beyond those active via the four fundamental forces of today's orthodox physics).

This is very exciting – but even more exciting is the fact that we have been able to use a simple electronic device and actually "store" a specific intention within the specifics of its electric circuit. This is important because, now, this intention-host device (IHD) can be placed next to a vessel of water at **any**

physical location and one can expect to obtain the same results. In this way, we have had others replicate these water pH results at multiple locations around the world^(1b) (provide we imprint the IHD for them).

It is important to note that the specific electric circuit, which contains several eeproms as memory devices plus several oscillators (1 to 10 MHz frequency range) as clocking agents plus a few diodes, capacitors and resistors, is not properly connected to operate efficiently in our normal physical reality, spacetime. However, it functions very well for subtle energy purposes in domains of nature beyond spacetime⁽⁷⁾.

It is also important to note that, when we (1) took a carefully intention-imprinted host device (IHD) and separated it by ~100 meters from a structurally identical unimprinted device (UED) and (2) turned both off electrically and (3) left them for several days, we found the intention imprint automatically transferred to the UED. Because no electric field was involved, this indicated that **a subtle energy** field is present and active in such an IHD. This particular subtle energy field is one of the important factors producing our striking anomalous results.

So one might ask, *“How is it possible for something like this to occur in the physical reality with which we are all so familiar?”* The answer is that, from our experimental work of the past ten years, we have discovered that there are actually **two** levels of physical reality and not just the **one** with which we are all familiar. It is this new level of physical reality that can be significantly influenced by human intention – not our familiar electric atom/molecule level one.

The two basic kinds of unique substances inhabiting these two levels of physical reality appear to interpenetrate each other but, normally, they do not interact with each other. Our working hypothesis is that this occurs because, at one level, we have our normal subluminal EM behavior but, at the new level, we have superluminal behavior. We label this normal state as **the uncoupled state** of physical reality. In the uncoupled state, with our five physical senses, we can perceive objects in our normal physical environment. However, this **new level** of substance is currently **invisible** to us and to our traditional measurement instruments because it appears to function in the physical vacuum (the seemingly empty space between the fundamental particles that make up our normal world).

It is the use of these intention-host devices (IHDs) that affect the experimental space in such a way that meaningful coupling begins to occur between these two very different kinds of substance. Then, the vacuum level of physical reality becomes **partially visible** to our traditional measurement instruments. We have labeled this condition **the coupled state** of physical reality.

Figure 2 metaphorically illustrates the key difference between materials in the two states of physical reality.

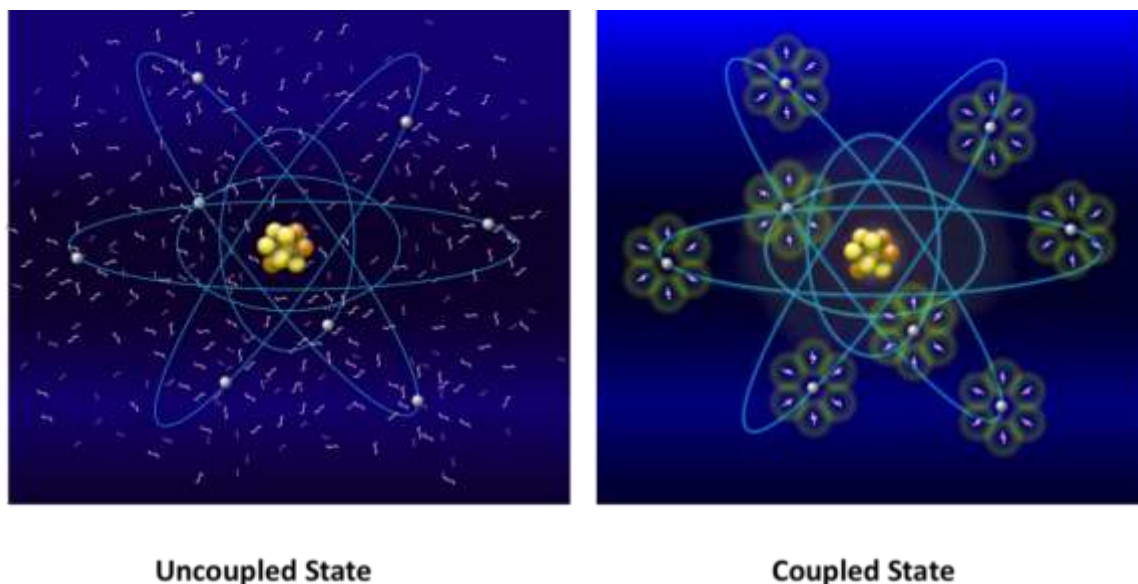


Figure 2a. The physical reality metaphor.

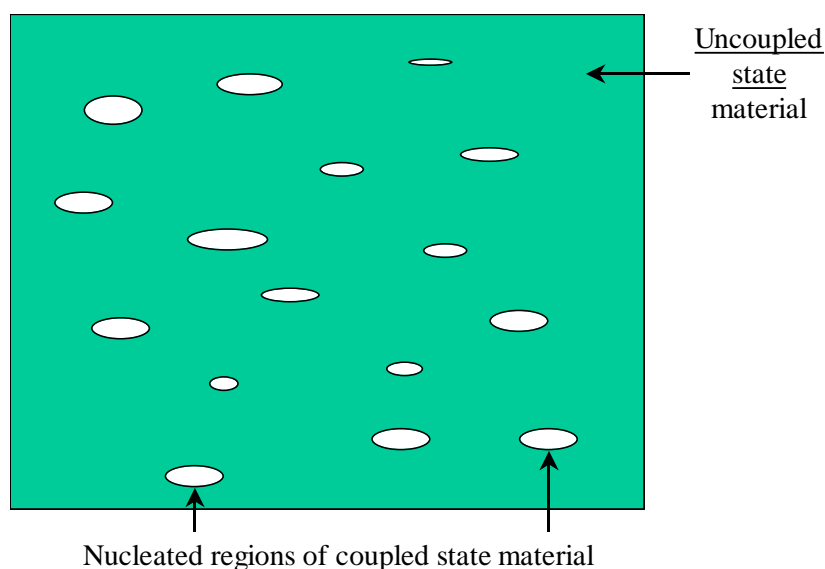


Figure 2b. Nucleation and growth of the macroscopic coupled state of physical reality.

In Figure 2a, the normal uncoupled state of physical reality is illustrated metaphorically on the left with a classical picture of the atom with electrons moving in well-defined orbits at velocities less than the speed of electromagnetic light and the non-interacting, superluminal velocity moieties from the physical vacuum illustrated as randomly moving dots of light. When the intention host device (IHD) has fully conditioned the experimental space to the coupled state, my working hypothesis is that the coupled state material looks more like that illustrated on the right of Figure 2. A macroscopic picture of this

overall process as it develops within an experimental space is illustrated in Figure 2b. This is thought to lead to a composite of coupled state domains embedded in a matrix of non-coupled state material.

Experiments:

The first phase of our intention-host device experiments^(1a) involved designing four separate target experiments. Each was to be influenced by an appropriate, separate intention-host device that would be plugged into a wall outlet of the experimental space, placed within a few feet of the target experiment apparatus and switched on. Our novel procedure for introducing a specific intention into a host device was to do it mentally and emotionally from a deep meditative state^(1a).

For the first target experiment, the intention was to **increase** the pH of a vessel of water in equilibrium with air at room temperature by +1.0 pH units with **no** chemical additions. Our measurement accuracy was ± 0.02 pH units. Figure 3 shows a sample result for this target experiment. One can readily see that it was robustly successful in producing the intended result (which was about 100 times larger than the noise level).

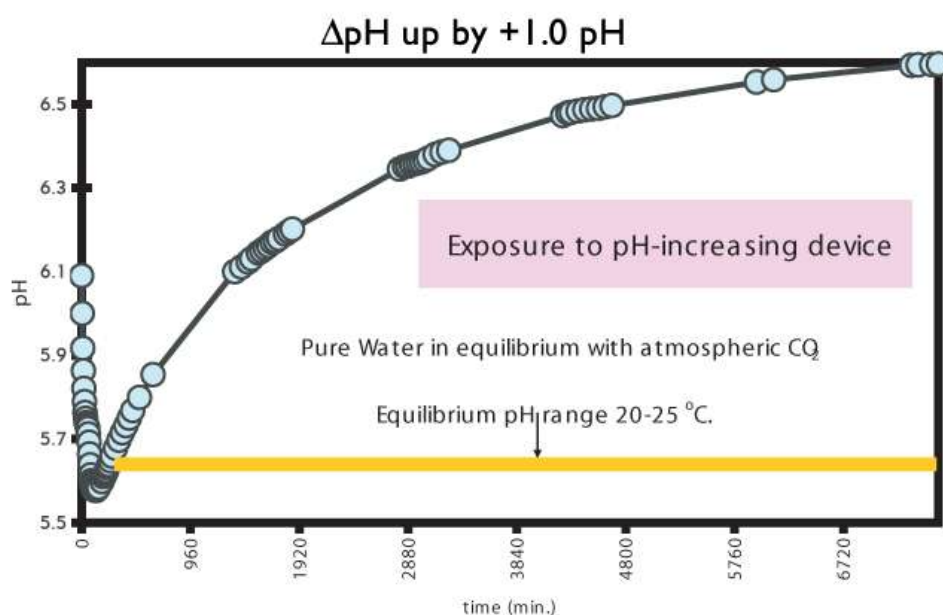


Figure 3. Plot of pH rising one full pH unit due to exposure to a pH-increasing intention-host device.

The second target experiment was with water in equilibrium with air at room temperature but the intention was to **decrease** the pH by ~ 1.0 pH units, again with **no** chemical additions. Figure 4 shows a sample result for water more alkaline than the Figure 3 example.

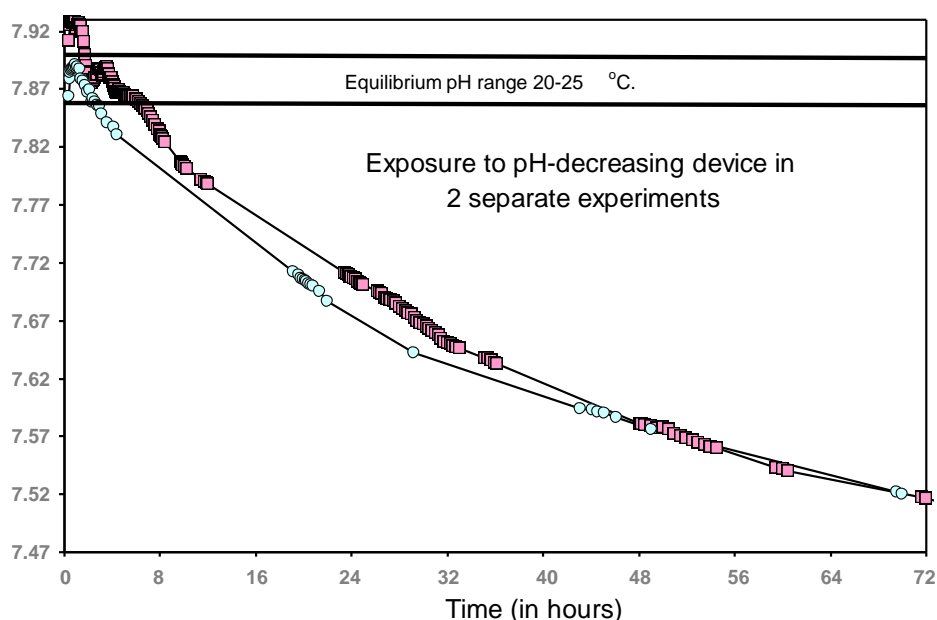


Figure 4. Plot of pH decrease via exposure to a pH-decreasing device.

Once again, this experiment was successful. Similar successful results have been obtained for a wide variety of water types.

For the third target experiment, the material medium was an *in vitro* biological molecule, alkaline phosphatase (ALP), a liver enzyme. The intention was to **increase** the chemical activity of ALP by a significant amount via just exposing the ALP for a period of 30 minutes to its intention-host device “conditioned” space that had been brought to **the coupled state**. Once again, the experimental results^(1a) were remarkably successful compared to the built-in controls. About a 25%-30% increase in ALP chemical activity was achieved at $p < 0.001$ ($p < 0.001$ means that there was less than one chance in 1000 that such results occurred via a **random** process of nature).

In the fourth target experiment, the material medium was an *in vivo* living system, fruit fly larvae. Here, the intention was to significantly **increase** the ratio of the cell’s energy storage molecule, ATP, to its chemical precursor, ADP, so as to make the larvae more physically fit and thus have a greatly reduced larval development time, τ , to the adult fly stage. Again, with built-in controls, this living system was exposed to its intention-host device-“conditioned” space for the entire period, $\tau \sim 28$ days. We found that the [ATP/ADP] ratio increased by $\sim 15\%-20\%$ with $p < 0.001$ and τ decreased by $\sim 20\%-25\%$ at $p < 0.001$.^(1a-1c) These experimental results have been published in over a dozen scientific papers⁽⁷⁾ and three seminal books⁽¹⁾. Experiment 1 has been replicated by others in ten U.S. and European laboratories^(1b,1c). Thus, in today’s world and under the proper conditions, the Descartes assumption has been **unequivocally proven to be very, very wrong!** One can clearly see that human consciousness, in the form of a specific intention, is a significant thermodynamic variable in the conduct of orthodox

experiments into the study of nature! Highly inner-self managed humans also appear to be capable of producing such results via subtle energy radiations broadcast from their own biofield.

What appears to happen here is that the active IHD is capable of acting on **the experimental space itself** and lifting it to an altered (higher) gauge symmetry state of nature^(8,9) wherein novel, new phenomena of nature can manifest and materialize. Although this may seem to be a type of alchemy, it is **not an equilibrium thermodynamic change**; rather it is a **metastable state of thermodynamics** that has been created. A close analogy is the laser process wherein the lasing crystal must be continuously pumped via an incoherent light flux to lift the atom's or molecule's electrons to the appropriate excited state for the coherent light emission to continue. Stop the incoherent light pumping and the lasing process stops. This is also a dynamic, metastable thermodynamic state process. In our IHD case, we must periodically re-imprint the device to regenerate the unique coupling ingredient that slowly leaks away into the environment. Figure 5 illustrates such a process.

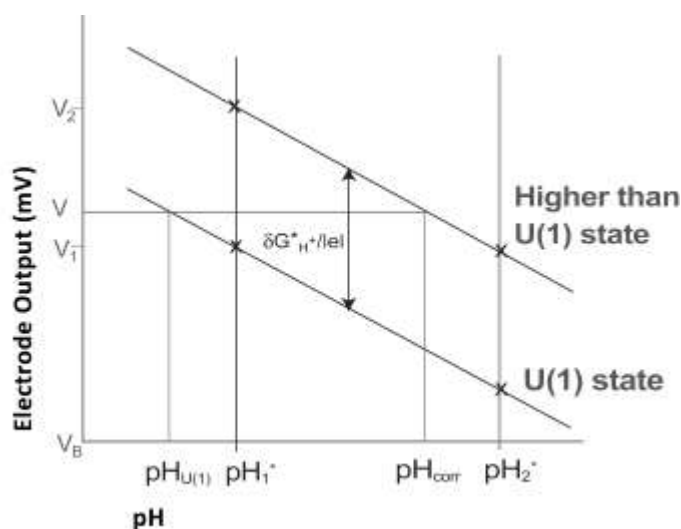


Figure 5. The electrode electrical voltage output vs. pH plots for both the U(1) state ($\delta G^*=0$) and a higher than U(1) EM gauge symmetry state.

This IHD-generated metastable thermodynamic state condition lifts the experimental space to such a level that four unique and novel material properties have been exhibited. These are:

1. The D.C. Magnetic Field Effect

From such an IHD-conditioned space, one can sometimes observe a D.C. magnetic field effect behavior on the pH of pure water wherein the pH-electrode registers alkaline when the south pole of the magnet points into the water and registers acidic when the north pole points into the water (see Figure 6).

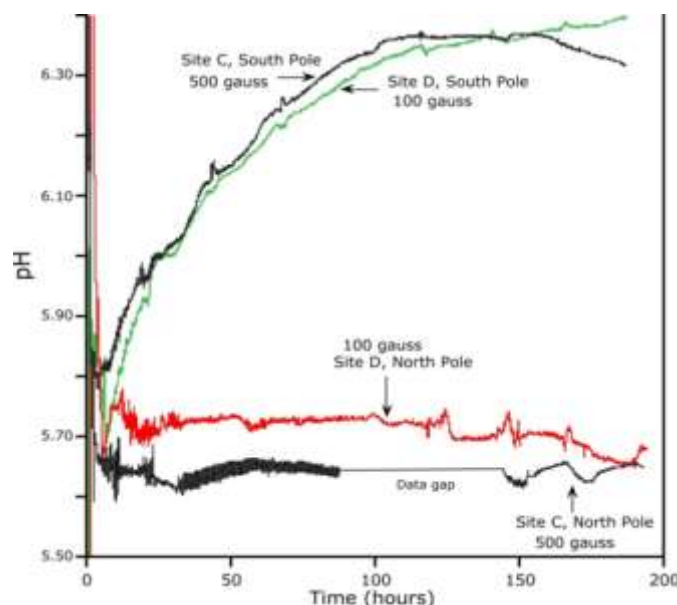


Figure 6. The pH changes with time for pure water for both N-pole up and S-pole up of axially aligned DC magnetic fields at 100 and 500 gauss.

Such behavior **never** occurs for an unconditioned space (our normal $U(1)$ gauge symmetry state – our normal physical reality). Because of Figure 6 we have assumed that the presence of **any** D.C. magnetic field effect behavior indicates the presence of a partial $SU(2)$ gauge symmetry state and thus a higher **metastable thermodynamic free energy state than our normal reality exists**.

We have found that kinesiological testing of various muscle groups on the human chest area^(1b), by exposure of these groups to one end or the other of a ceramic bar magnet showed, unequivocally, that the south pole facing such a muscle group, at about 1 cm separation from the body, strongly strengthened the arm muscle while the north pole facing the same muscle group (~1 cm away) strongly weakened the same arm muscle. We have deduced from this that the human acupuncture meridian system is **already** at the partial $SU(2)$ gauge symmetry state. This means that self-applied human intention, just like the four target experiments in Phase 1, can increase the Qi-flow in such meridians and thus significantly increase human health and human performance.

2. The Appearance of Sub-Hz Range Material Property Oscillations

From such an IHD-conditioned space, one also observes that all measured material properties exhibit large time-dependent amplitude oscillations but with frequencies in the **one tenth to one millionth of a Hertz** range rather than in the many Hertz range (see Figure 7)^(1a).

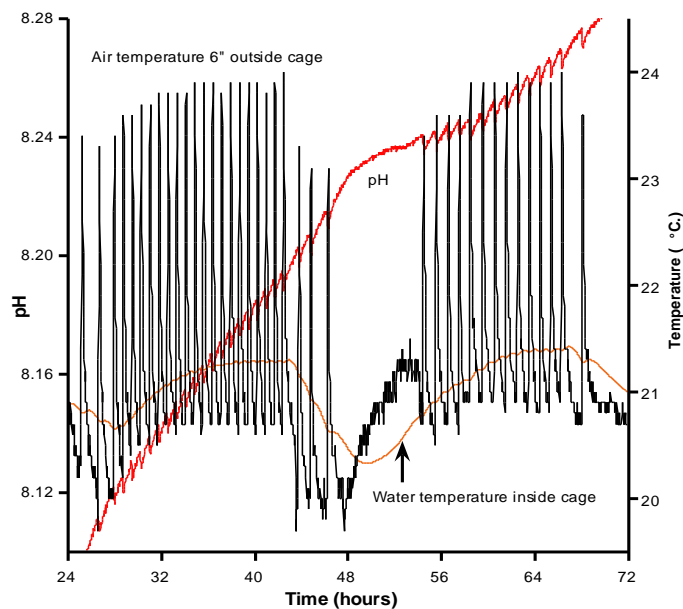


Figure 7. Pure water with ZnCO_3 particulates in a vessel inside a Faraday cage.

This material property behavior has never been observed in our normal U(1) gauge state reality.

3. The Development of Very Long Range Property Coherence

From such an IHD-conditioned space, one also observes (a) the development of great material property coherence over at least the entire room (10 feet to 11 feet square) for a single type of property measurement (see Figure 8),

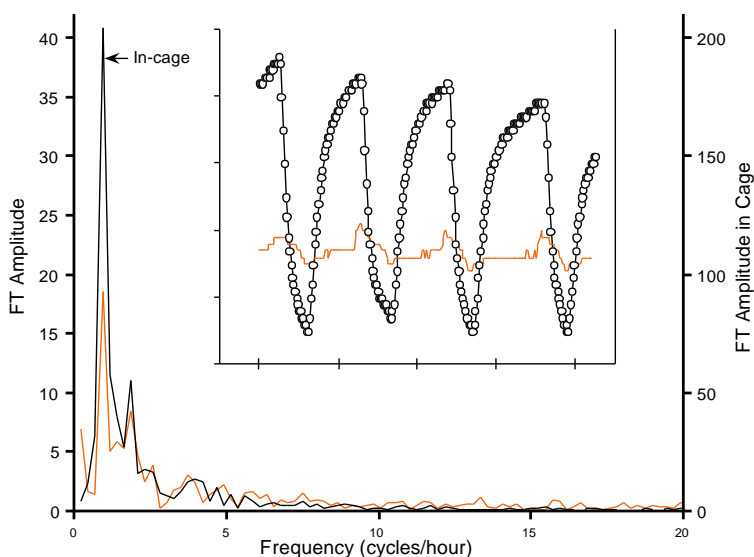


Figure 8. Amplitude spectra from Fourier analysis of air, T-oscillations real-time data (see inset) both inside a Faraday Cage located inside a room and 10 feet away **outside** the closed door of the same room.

(b) for different types of property measurement at the same physical location via gathering and plotting the Fourier Transforms of the property measurement wave shape, for both water temperature and water pH, which entrain intimately with each other (see Figure 9),

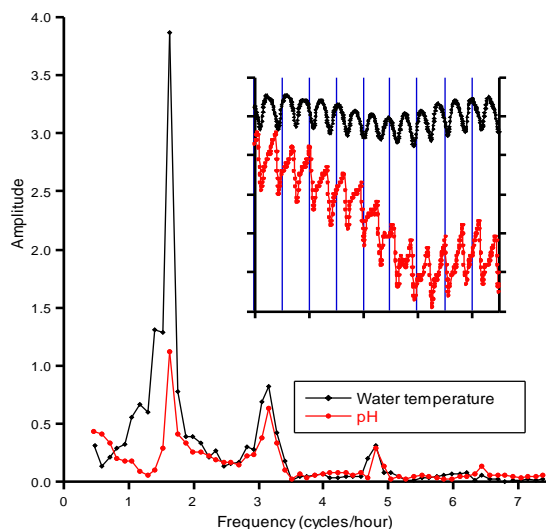


Figure 9. Fourier Transform amplitude comparison of both water T-oscillation and pH-oscillation data in the water vessel. Real-time oscillation data is shown in the inset. The fundamental period is 36.6 min. and three harmonics can be easily discerned.

(c) from such an observed IHD-conditioned space, one can also observe that, for a time-sequence of air temperature oscillations, when one blows a strong **fan** on them from two different locations, one at a time, the oscillations might jiggle a bit but they do not disappear (see Figure 10) as they would under normal conditions and

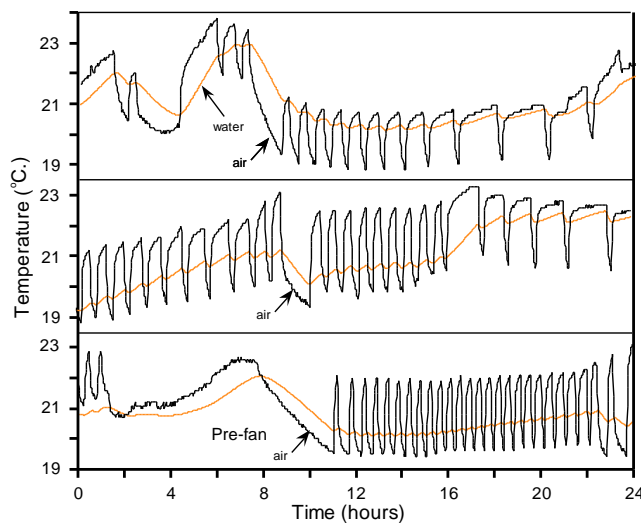


Figure 10. Temperature oscillations in air (1 foot outside the Faraday cage) and water, with and without the fan operating.

(d) for such an observed IHD-conditioned space, when one places a natural quartz crystal with c-axis pointing upwards in the experimental space to observe the shape-pattern of the air-temperature oscillations and then rotates said crystal by 90 degrees, one immediately sees the oscillation shape-pattern invert itself as well as makes changes in frequency and amplitude (see Figure 11)^(1a). This never occurs in our normal reality.

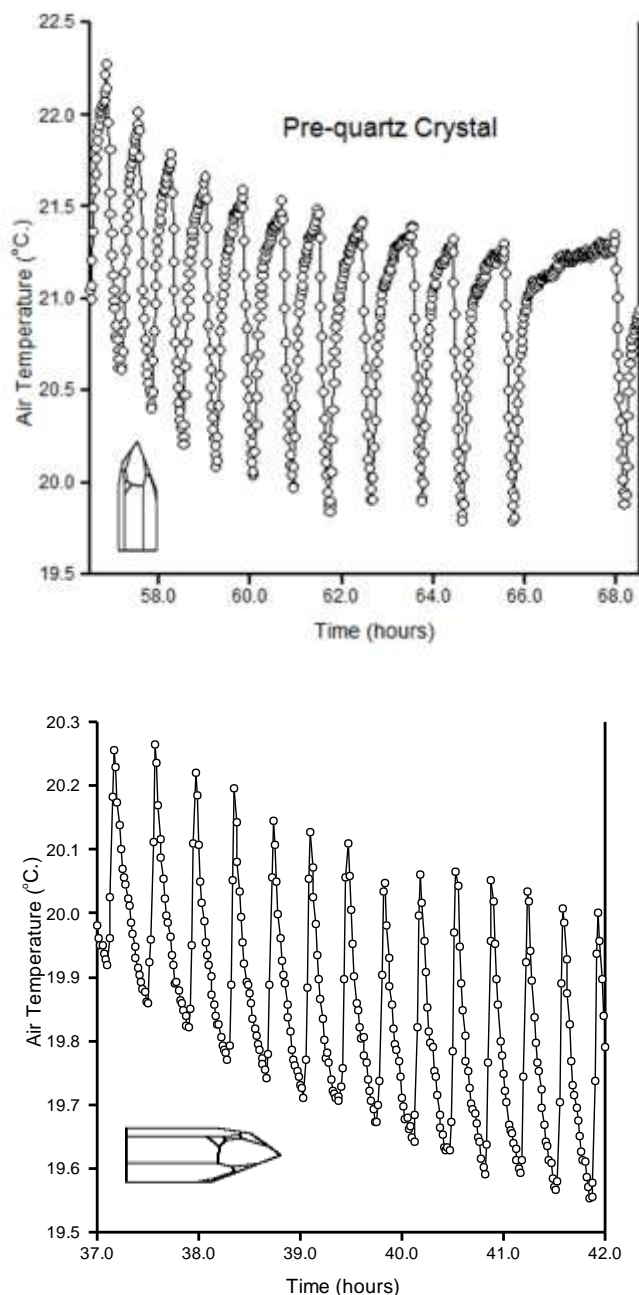


Figure 11. Comparison of air, T-oscillation amplitude, frequency and waveform between the vertical quartz crystal condition and the condition immediately after changing the orientation of the quartz crystal to the c-axis horizontal position.

4. The Appearance of Very Long Range, Subtle Energy, Information Entanglement

In the replication experiments of our $\Delta\text{pH} = +1$ pH unit studies, pseudo-control sites, with **no** active IHD present, were first set up within ~5 to 20 miles of an activated IHD test site. Just like our very early ~100 meter separation experiment between an imprinted IHD and an unimprinted IHD, with both switched off electrically, within a few days the specific imprint appeared to transfer from the imprinted device to the unimprinted device because the pH-measurement equipment located at the designated control site, exhibited an analogously-shaped $\Delta\text{pH}(t)$ behavior to that found at the active test site. (See Figure 12)^(1c).

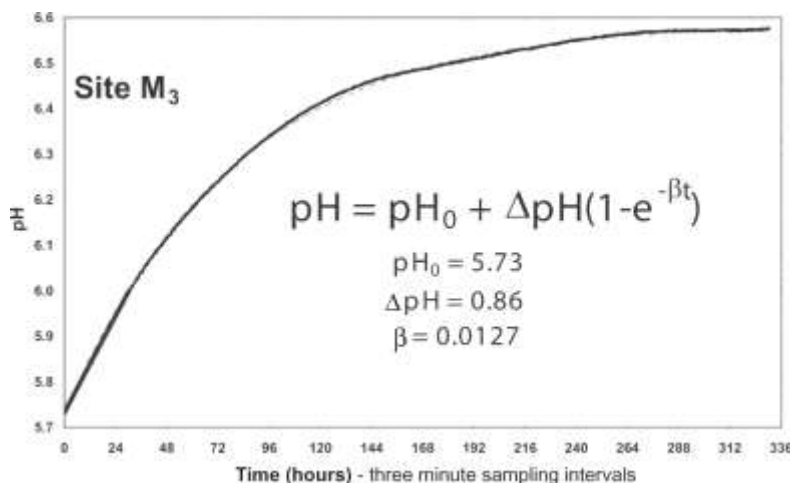


Figure 12. Perhaps the most remarkable finding is that, at all of the control sites where no IHD was ever present, the time-dependent behavior of the measured pH was almost identical to that found for the IHD sites.

This exponential-type behavior was typically of the quantitative form

$$\text{pH}(t) = \text{pH}_{\text{th}} + \Delta\text{pH}[1 - \exp(-\beta t)] \quad (1)$$

where pH_{th} ~the spacetime, theoretically calculated value, $\Delta\text{pH} \sim 0.75 - 1.1$ pH units and $\beta \sim 0.01 - 0.005$ (min)⁻¹ depending on the particular site and day. Next, the Baltimore and Bethesda sites were used as pseudo-control sites, at about 1500 miles distant, for the Payson, Missouri and Kansas active test sites^(1c) with similarly exhibited entanglement. Finally, the London, U.K. and Milan, Italy sites, at about 5,000 to 6,000 miles distance were used as pseudo-control sites for these three active sites with similar types of entanglement results^(1c).

I have labeled these as pseudo-control sites because, to date, we have found **no way** to completely shield these control sites from this new type of subtle energy. This particular subtle energy does not appear to be EM energy and we conclude from my new theoretical model (see below) that it appears to be a type of magnetoelectric (ME) energy.

Because of the serious problems that exist with today's orthodox science reference frame (RF) for the study of **all bands** of nature's manifold phenomena, wherein the foregoing data, **being human**

consciousness dependent, lies **outside** of the spacetime band, this author proposes a quite different RF for the study of nature than our present spacetime-only RF. I propose that we seriously consider a duplex space RF consisting of two, four-dimensional **reciprocal** subspaces, one of which is spacetime.

Since the reciprocal of distance is number per unit distance, or a **spatial frequency**, while the reciprocal of time is number per unit time, or a **temporal frequency**, this reciprocal subspace (or R-space) is a four-dimensional frequency domain. Of course, the spacetime subspace (D-space) is perfectly well-suited for natural phenomena involving particles (our earlier classical mechanics). On the other hand, the reciprocal subspace, R-space is well-suited for natural phenomena involving true waves (the types one sees drawn in textbooks) rather than the types of supposedly physical waves that one sees or hears (which are just particle density modulations or particle flux density modulations).

Unlike our present, spacetime-only RF, which is not really suitable for QM when it involves human intention or human consciousness, this particular duplex space proposal is quite suitable for both QM and RM. Further, for any two reciprocal subspaces, a material property that functions in one has a conjugate material property functioning in the other that is quantitatively given by a **modified** Fourier Transform^(1c) of the other and vice versa. In this particular duplex space case, because, here the physical vacuum (R-space) is transparent and thus non-dispersive to EM energies, its natural materials appear to be of both a superluminal nature and a type of magnetic charge nature so a modulator type of mathematical function must modify the mathematical Fourier Transform.

This modulator material, called “deltron”, is postulated to be from the domain of emotion with the property of both subluminal **and** superluminal material interaction character (See Figures 13 and 14)^(1c).

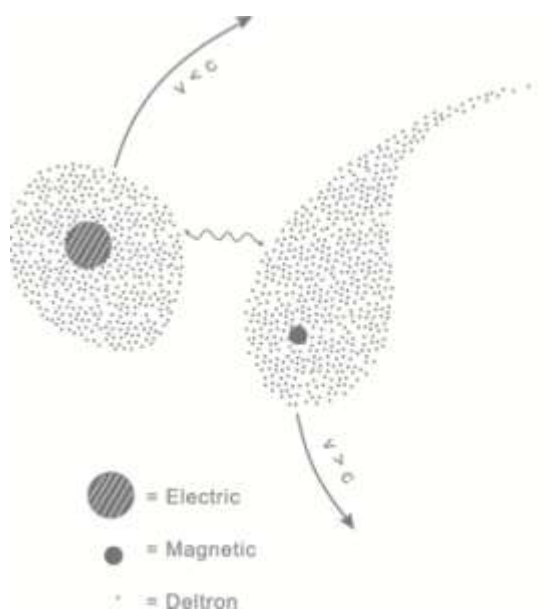


Figure 13. A higher dimensional level substance, labeled deltrons, falling outside the constraints of relativity theory, acts as a coupling agent between the electric monopole types of substances and the magnetic monopole types of substances.

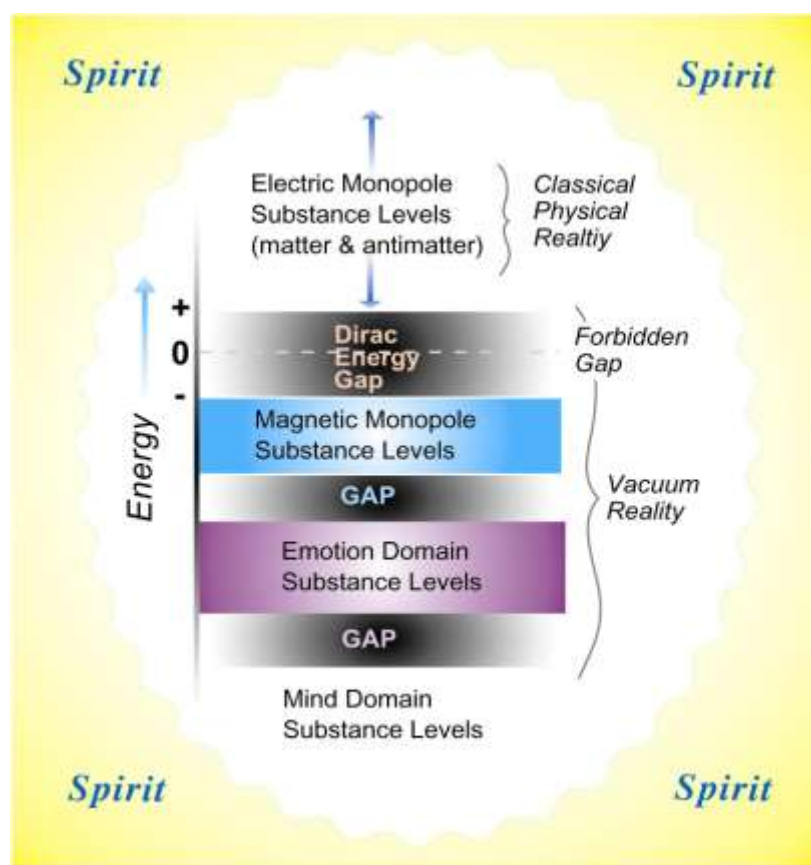


Figure 14. An energy level diagram embracing both classical physical substances and “unseen” vacuum substances.

From Figure 14, my working hypothesis is that the proposed duplex space RF is embedded into an overall reality RF consisting of the three higher dimensional domains of emotion, mind and spirit^(1c). The velocities of the subtle materials functioning in these three domains are also thought to be of the superluminal category so that interaction resonances can occur between them and the R-space substances of the magnetic information wave realm (and still remain transparent to EM sensors).

One other interesting characteristic of this particular duplex space is what can be called “the mirror principle”. This is not a **reflection** type of mirror but rather is an **inversion** type of mirror. Figure 15 is one example of this type of velocity inversion that occurs at $v=c$.

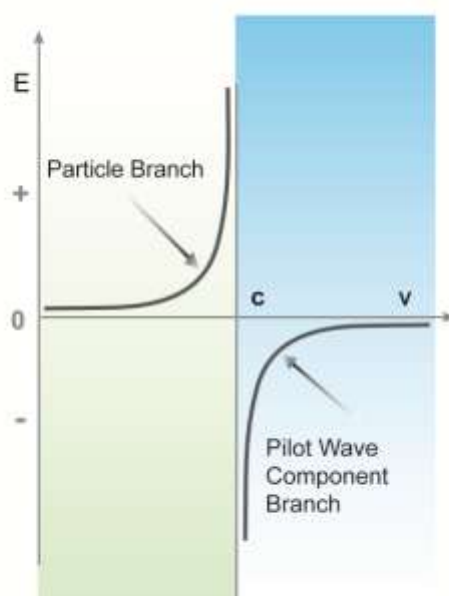


Figure 15. Energy-velocity diagram for a D-space particle and its R-space magnetic information wave conjugate.

Here, as one tries to accelerate a D-space, positive mass particle towards $v=c$, at some velocity less than $v=c$, there is a high probability that the EM particle will **tunnel** through the $v=c$ potential barrier and transform into an ME wave moving in the $v>c$, R-space, negative energy state region. Thus, Einstein's theoretical constraint that no positive mass particle can ever reach and exceed $v=c$, is now **invalid** in such a duplex, reciprocal subspace RF. Likewise, such tunneling from superluminal ME velocity states to subluminal, EM velocity states should also be able to occur! I am proposing that this particular duplex space RF **plus deltrons** allows (1) our present orthodox science paradigm to be expanded to include both human intention and human consciousness to act as significant experimental variables in the study of nature, (2) QM to function without requiring EM substance to **simultaneously** exhibit **either** particle **or** wave behavior but rather particle **and** wave behavior, (3) physical vacuum substances to exist and exhibit superluminal behavior, 4) both positive energy states and negative energy states exist and (5) the EM, $v=c$, light barrier is no longer a relativity hindrance for subluminal \leftrightarrow superluminal transformations of substance. Negative energy states are not a problem when one sees them as vectors with both an amplitude, R , and a phase angle, θ , where $E = R(k)e^{-i\theta(k)}$ and k is the frequency coordinate of R-space!

The vector postulate occurs because the substances of our duplex space, from a **D-space perspective** is (1) an electrical particle, $v<c$, mathematically real part plus (2) a magnetic information wave, $v>c$, mathematically imaginary part. Plotting this with $x=(1)$ on the x-axis and $iy=(2)$ on the y-axis

leads to the (x, iy) point connected to the $(0,0)$ origin with a vector of amplitude $R_2(x^2 + y^2)^{1/2}$ and the phase angle $\theta = \tan^{-1} y/x$.

Phase III of Intention-Host Device research: Information Medicine and Intention Broadcasting Experiments

To understand **information medicine**, first consider my “silver colloid metaphor”: If one takes a glass of water and puts some bacteria in it and, as well, puts some silver colloid particles in it, most if not all of the bacteria are killed. From this result, people thought that physical contact between the silver (Ag) and the bacteria somehow led to the demise of the bacteria. Over time this led to the creation of pharmaceutical companies to do the same kind of thing in our bodies and this, in turn, led to today’s **chemical medicine**.

Today, one finds that if you start by putting some bacteria in a glass of water and then (1) if you put a special fluorescent tube containing silver electrodes nearby and then (2) ignite the gas discharge so that it fills with EM light and then (3) focus some of the out-flowing light from the tube into that glass of water, you **also** kill the bacteria. Thus, the bacterial killing modality is actually one or more specific EM photons, present in the natural electromagnetic emission spectrum of silver, incident upon the bacteria. This, in part, has led to the development of today’s unfolding **energy medicine**.

Beyond this, if one takes the glass of water containing the specific bacteria and sets it in a room containing a **specifically imprinted** intention host device (IHD) that is turned on to “condition” and appropriately tune the space of that room, this can also kill the bacteria. This will lead to what we call **information medicine**. Here, it is the specific information contained in the imprint statement of the IHD that is ultimately the therapeutic instrument.

Our present IHD operational modalities are three-fold:

- (1) For a specific medical challenge for a specific individual, a carefully designed intention statement can be prepared for the IHD. This, then, moves to a team of meditators who (a) sit together quietly around an unimprinted device, called a UHD, which is plugged into an electrical wall socket, (b) go into a deep meditative state after first developing a state of attunement with each other and with invisible colleagues from higher dimensional domains of reality, (c) they internally (emotionally, mentally and spiritually), with strong emotion, focus on a **reading** of the specific intention statement designed specifically for this experiment until (d) when it **feels** as if this particular creation process has been completed, the reader states “so be it, Thy will be done!” and, (e) finally, a secondary imprint statement is given to seal the primary imprint into the IHD so that it does not leak away wastefully, again followed by “so be it, Thy will be done!” This IHD is then wrapped in an RF (electromagnetic radio frequency) shielding pouch and shipped to the intended recipient. This recipient then takes the IHD out of the pouch, places it under their bed, plugs it into an electrical outlet and switches it on. It is left there undisturbed for three months to “**condition**” the room to a higher level of reality wherein the healing

energies and information of both coarse and fine physical realities plus higher dimensional realities work with the recipient in accord with the imprint statement of the IHD. At that point in time, re-imprinting of the device is recommended (on a ~3 month cycle).

- (2) The second healing modality is to utilize the procedure of modality #1 but with a much more general imprint statement. In this case, the venue would be a hospital, clinic, practitioner's office, corporation office, school classroom, etc. The IHD would be placed in a quiet location of the room, plugged in and turned on to "condition" that space. Time spent in that space would benefit the individuals sitting in the space.
- (3) The third healing modality is via simultaneous long-range **ME broadcasting** of a specific intention to a small or large group of people with the same or very similar type of health challenge for an extended period of time. A specific example of this modality is given below.

The 2004-2005 Depression/Anxiety Broadcasting Experiment

This particular experiment became a very important part of Cindy Reed's Holos University D.Th. thesis (successfully accomplished in 2005)⁽¹⁰⁾.

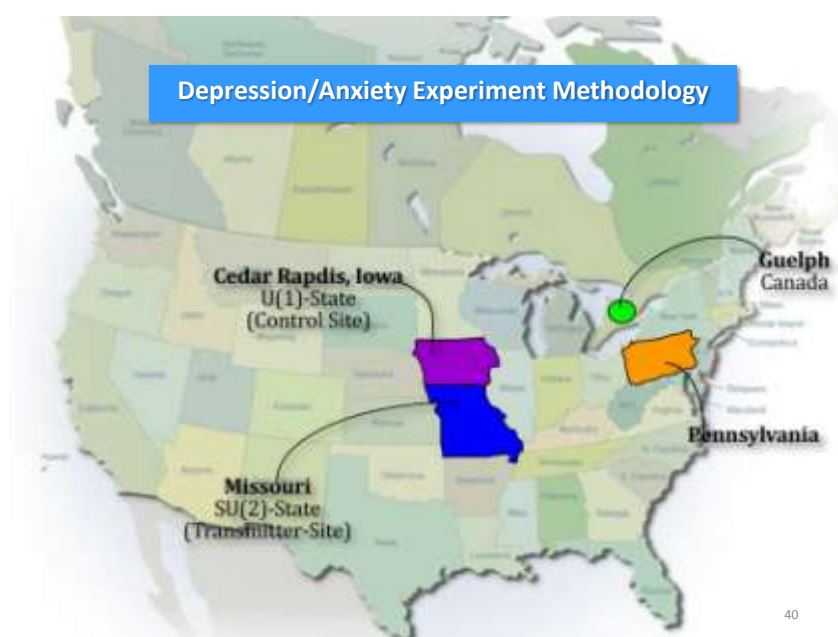


Figure 16. 2004-2005 Depression/Anxiety broadcast experiment map

As illustrated in Figure 16, (a) the broadcasting site was near Springfield, Missouri, (b) the control site was in Cedar Rapids, Iowa and (c) most of the subjects (about 500) were located in central Pennsylvania about 1500 miles away with a small number in Guelph, Canada.

For both (a) and (b), the names and home addresses of either the treatment group (a) or the control group (b) were continuously scrolled through a computer. With (a), the room also contained a

specifically imprinted continually operating IHD to **condition** the space appropriately. With (b), the room also contained a continuously operating **UHD**. The IHD was re-imprinted on a regular 3 month cycle. This set-up is illustrated in Figure 17.

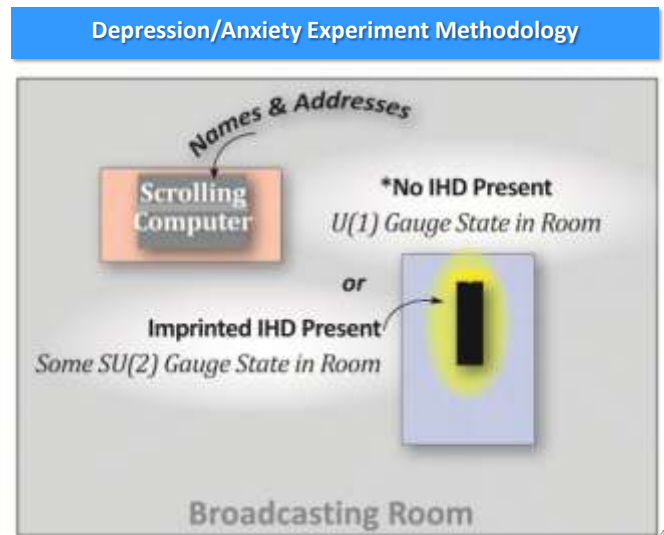


Figure 17. Depression/Anxiety experiment methodology.

Table I illustrates the hypothesis held while Table II provides the 8-month results for the tests carried out. Much greater detail is given in Reference 10.

Table I

Hypotheses

Hypothesis	Null Hypothesis
The intention will have a significant effect on anxiety and depression when broadcast in a conditioned space (Pilot Project, Groups A and B).	The intention will have a significant effect on anxiety and depression when scrolled on a computer screen in unconditioned space without an IHD (Groups A and B only).

Table II

Significant Results for all Groups

	Between Groups	Tests within Subjects Pre to Post-test		
	STAI Y-1	STAI Y-1	STAI Y-2	Zung
Group A	.089	.001	.000	.009
Group B	NA	.001	.000	.003
8 Month Intervention	NA	.003	.000	.001
11 month Intervention	NA	.003	.000	.001

45

The conclusion was that no benefit occurred for the control group but robust success occurred for the treatment group after 8 months of broadcasting.

The Payson, Arizona to Berlin, Germany Broadcasting Experiment

In 2009-2010, we set up a very long-range pH-change of +1.5 pH-units experiment from our laboratory in Payson, Arizona to a particular room in a particular house on a particular corner of Berlin, Germany (see Figure 18)⁽¹¹⁾.



Figure 18. Map of the Payson / Berlin broadcasting experiment.

Identical starting equipment (see Figure 4) was placed at each site as illustrated in Figures 19 and 20.

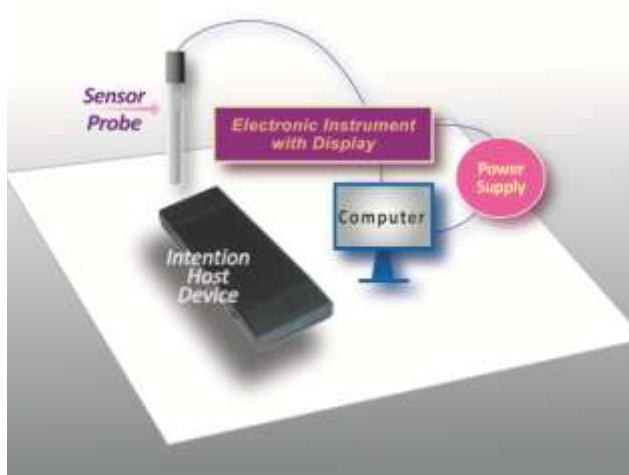
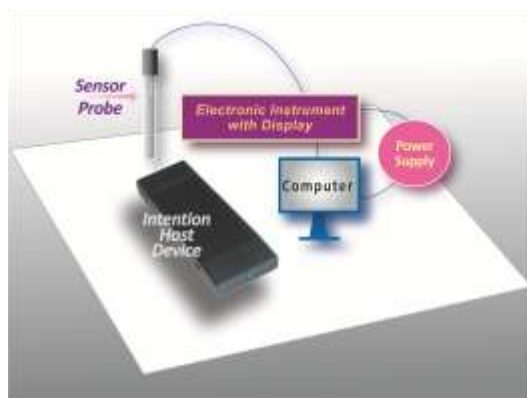
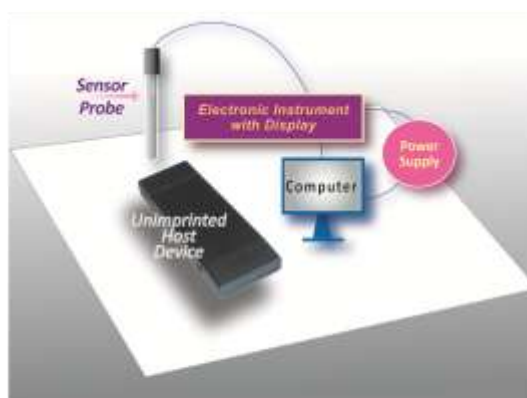


Figure 19. Payson experimental set-up.



Payson - IHD



Berlin - UHD

Figure 20. Identical experimental set-ups.

However, at the Payson site, we used an extra, different commercial pH-system. In both cases the sites started with **unimprinted** host-devices. However, the specific intention for change was intended to initially act only at the Payson site. The two key features of the imprint statement were, (1) the ΔpH -change was to be +1.5 pH units and (2) the actual “space-conditioning” for this Payson site change was to be **immediately** broadcast to the Berlin-site (thought to be a subtle energy rather than electromagnetic energy).

From the foregoing, our expectation was that (a) I would write the specific intention statement, (b) about a week later we would imprint the Payson device, (c) within the following week the Payson IHD would be put in the Payson shed and (d) it would be switched on during the following week at a precise time of our choosing. However, the actual monitored results for both sites are shown in Figure 21.

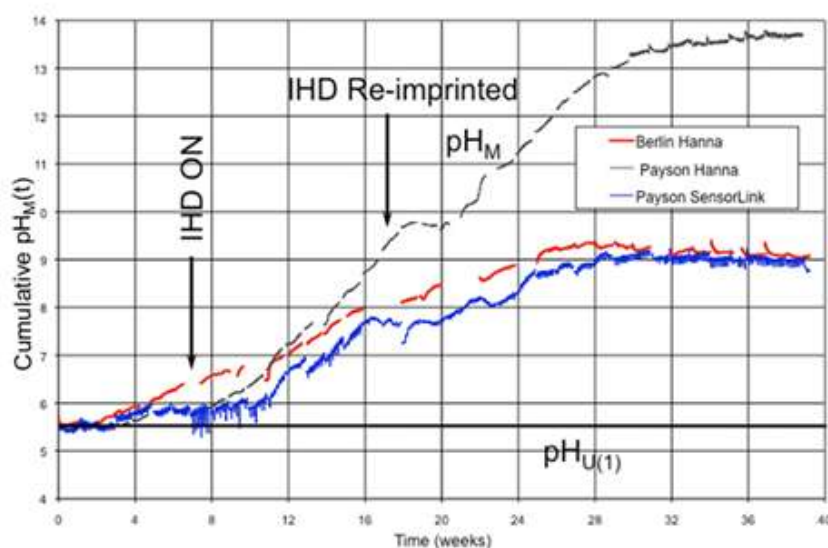


Figure 21. Graph showing pH cumulative values for the three monitoring setups.

Over the 8-month measuring period, we found that (1) pH at the Berlin site started to rise even **before** the Payson IHD was imprinted, (2) both of the Payson pH-electrode systems caught up to the Berlin pH-electrode system but only one of them closely tracked the Berlin pH-electrode system and (3) the Payson Hanna pH-electrode system plateaued at a much higher cumulative pH level than the Berlin Hanna pH-system.

These are truly remarkable results but with many still unanswered questions to be dealt with in future research of this type.

In closing this section on broadcasting experiments, on 12/03/2012, we imprinted two new IHDs, one for 44 children located around the world who have been diagnosed with autism and the other for their parents who have different needs. It is a year-long experiment of continuous broadcasting with the parents providing monthly feedback via (1) the filling out of ATEC and Zung reports plus (2) facebook sharing. This is a private group, meaning that only those who are members of the experiment will have access to the group feedback. At the one month marker, the facebook feedback is extremely encouraging for both parents and the children, even for those as far away as Australia on 12/04/12.

A Brief Theoretical Perspective

One can most simply compare psychoenergetic science with today's orthodox physics via a metaphor involving "word equations" as in Equations 22a and 22b.

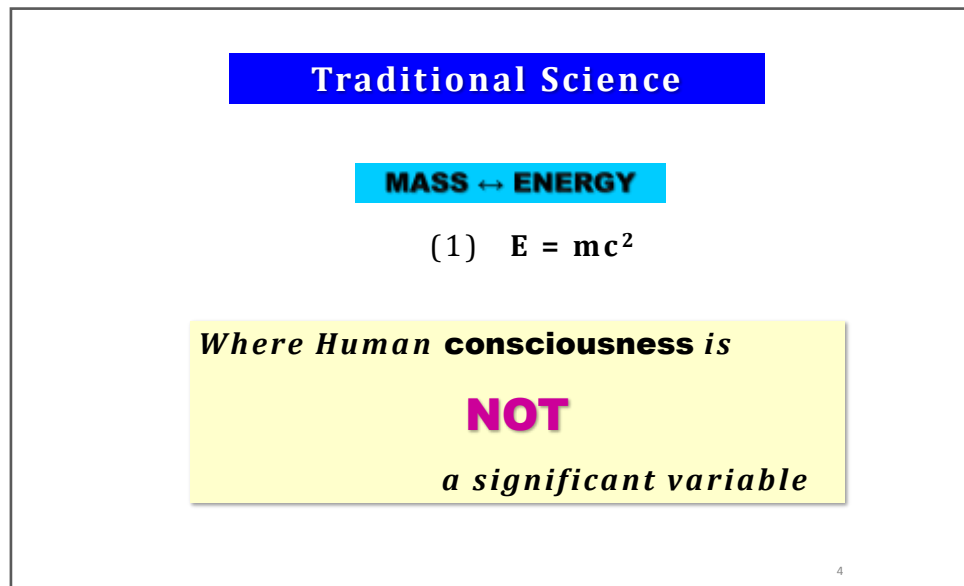


Figure 22a

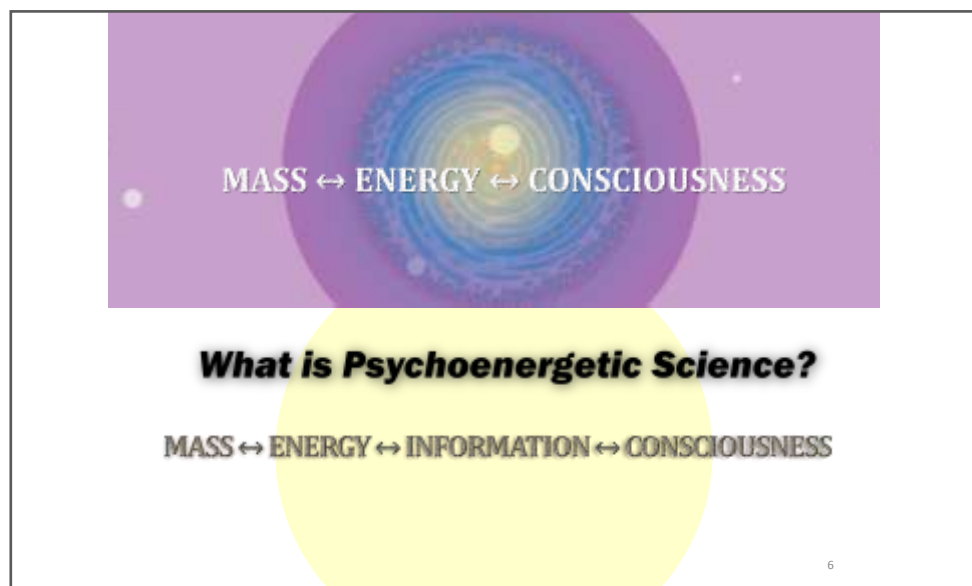


Figure 22b. Where human consciousness is a significant variable in physics.

In essence, today's orthodox physics is being expanded to include human consciousness and human intention as significant experimental variables in the research investigations. Although there is no commonly accepted definition for the word 'consciousness', it clearly manipulates information of all kinds and, since the days of Shannon⁽¹²⁾ and Brillouin⁽¹³⁾ it has been known that a process in nature that increases information in our world concomitantly decreases the thermodynamic entropy of our world by an equal amount. Thus, information change, ΔI^* , is connected to internal energy via either the Gibbs or

the Helmholtz thermodynamic free energy function. In terms of the Gibbs function, G , it can be written in the following form,

$$G = Pv + E - T (S_0 + \Delta I^*); \Delta I^* = -\Delta S. \quad (2)$$

Here, P equals pressure, v equals volume, E equals internal energy, T equals temperature, S_0 equals entropy and ΔI^* equals information change – so as ΔI^* increases, $S_0 + \Delta I^*$ decreases and therefore, G increases.

Interestingly, for our reciprocal duplex RF, any material property in one subspace has a conjugate property in the other subspace given by a Fourier Transform⁽¹⁴⁾ of the former. From our IHD experiments, we have been able to change the magnitude of a material property up or down by the use of a specific intention imbedded into a simple electrical device.

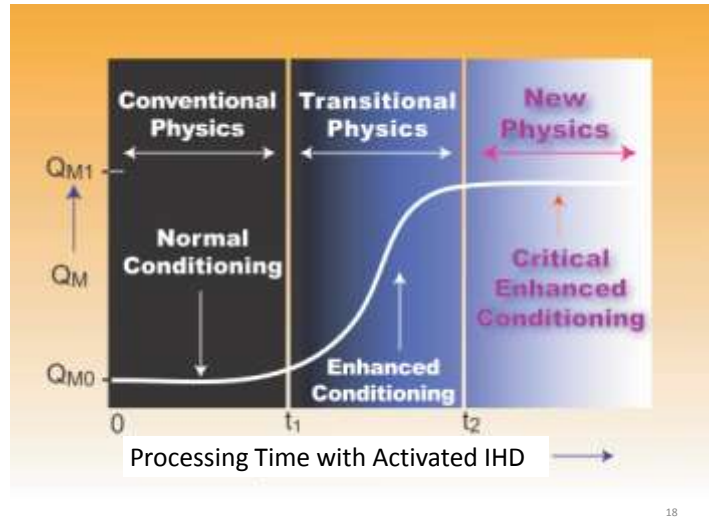


Figure 23. For any typical physical measurement, Q , the qualitative magnitude change, Q_M , is plotted versus the degree of locale conditioning produced by continued IHD use.

Figure 23 illustrates a typical non-linear time-dependence for increasing the measured magnitude of the material property, Q_M , from its initial value Q_{M0} , (our electric atom/molecule value) to its final value, Q_{M1} , as a function of IHD processing time. In a zeroth approximation order equation form, this can be written as

$$Q_M(t) = Q_e + \alpha_{\text{eff}}(t) Q_m. \quad (3)$$

Here, Q_e is our coarse physical reality value, Q_m is the imprinted coarse physical vacuum value (the fine physical reality value) and $\alpha_{\text{eff}}(t)$ is the time-varying coupling coefficient that allows these two very different media to interact with each other. If $\alpha_{\text{eff}}(t)$ slowly decays, the second term disappears and our normal coarse physical reality is restored. A general mathematical development for the zeroth order approximation is outlined in Appendix I.

My working hypothesis is that this duplex RF is imbedded in an overall reality RF consisting of the three higher dimensional domains of emotion, mind and spirit (see Figure 14).

Parts 3 & 4. Psychotherapy and the Healing Arts: Some Relevant Concepts Badly in Need of Expansion and Integration

A. The Reconnection Healing Workshops and Information Creation

The prime references for this topic are 15 and 16. Eric Pearl, of Reconnection Healing fame, first invited me to utilize our first subtle energy detector to make continuous experimental measurements of his workshops using this detector in the Figure 24 format.

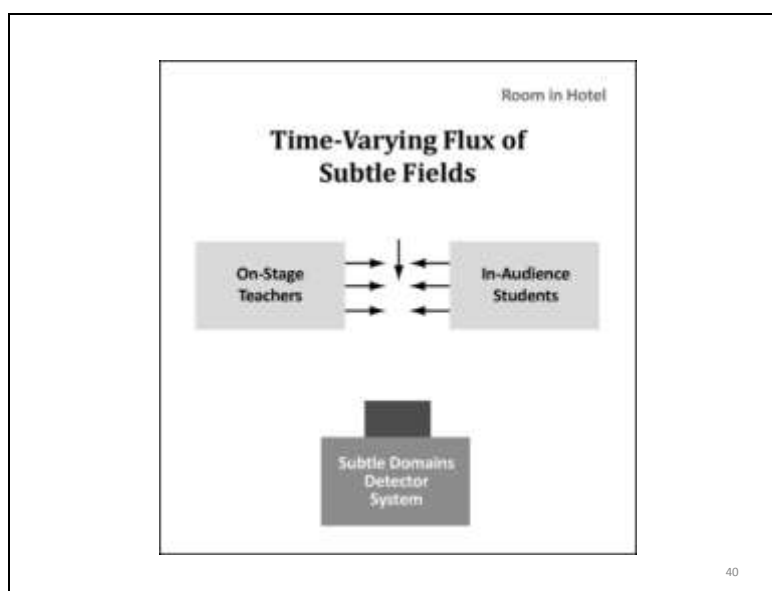


Figure 24. The general methodology is illustrated here.

This detector was actually a pH(t) measuring system (see Figure 24) wherein the measured departure from our normal, U(1) gauge state reality is illustrated via Figures 3-5. $\delta G_{H^+}^*$, is the thermodynamic free energy change of the aqueous H⁺-ion concentration from its equilibrium, U(1) gauge state value where $\delta G_{H^+}^* = 0$. This is actually what the system set-up of Figure 24 measures and a $\Delta pH=1$ unit change equals a 23.6 meV change. Thus, measuring $\delta G_{H^+}^*$ gives us a good quantitative measure of subtle energy magnitude change in our standard reality units.

Our first experimental test was at the Sedona, Arizona workshop of 2006. Figure 25 shows the first 9 hours of pH-data gathering which was ~5 to 6 hours before the workshop was to commence. The

uppermost curve, T_w , is the water temperature; the middle curve is the measured pH while the bottom curve is the theoretically calculated pH = $pH_{U(1)}$.

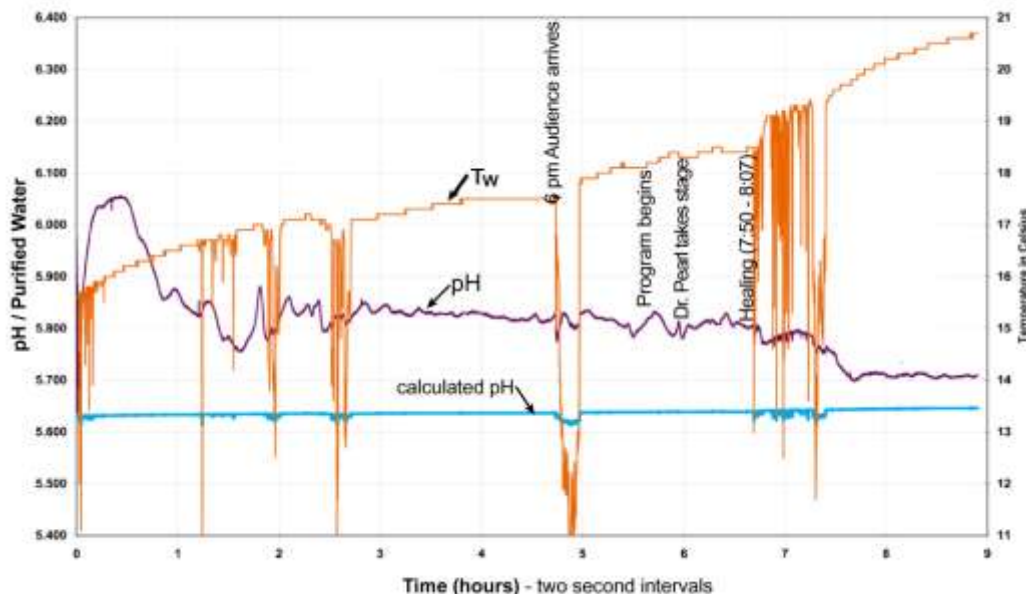


Figure 25. Very anomalous water temperature, T_w , behavior was observed at this Sedona, healing workshop.

The T_w -anomalies (the downward shooting lines) in Figure 25 started to appear ~5 hours **before** the audience arrived in the large room. We have experienced this kind of phenomenon in our Payson laboratory many times before and found that this type of anomaly correlates strongly with the presence of high $\delta G^*_{H^+}$ - values.

It is important for the reader to realize that this T_w -data indicates that this particular space had somehow been “lifted” to a very high $-$ value well-before **any** of the workshop participants had entered the room (perhaps information entanglement in time?). when a pH-calibration cycle was carried out with this same detector ~1 week **after** this workshop event, absolutely no anomalies appeared in either the pH or T_w plots and the room appeared to be completely back to the U(1) gauge state.

Analysis of the gathered raw data to create a $\delta G^*_{H^+}(t)$ -plot occurred about 1.5 weeks later. At time $t=0$, $\delta G^*_{H^+}$ was found to be **almost double** what it would have been if α_{eff} in Equation 3 had been zero. At its peak (almost two days later), it had almost tripled the $\alpha_{eff} = 0$ value and, at ~1.5 weeks later, it had decayed back to ~double again.

If one asks the question “how much would one need to **heat** this room from an $\alpha_{eff}=0$ state to yield its maximum $\delta G^*_{H^+}$ -state, as found by our detector, and describe the result as an **effective**

temperature change, ΔT_{eff} , as illustrated in Figure 26, one notes that it would have required a change in $\Delta T_{\text{eff}} \approx 300^\circ\text{C}$ over the workshop period. However, the actual change in workshop room temperature was no more than $\sim 5^\circ - 10^\circ\text{C}$.

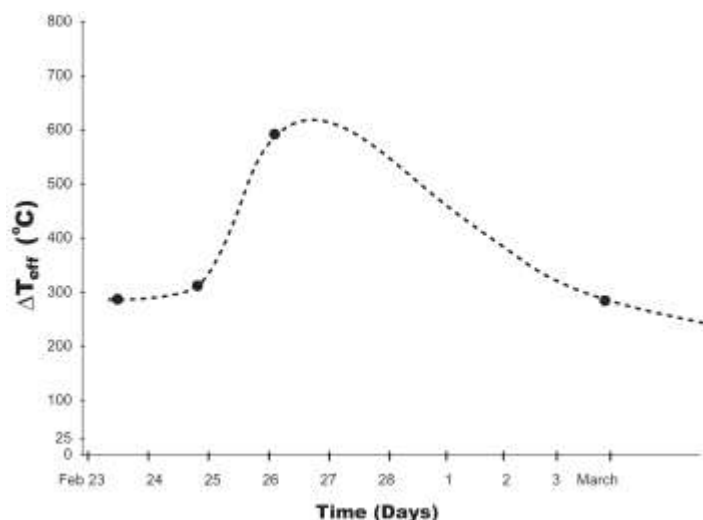


Figure 26. Possible data plot of the excess thermodynamic free energy for the healing workshop room as a function of time via converting $\delta G_{\text{H}^+}^*$ to an energy equivalent, effective change in temperature, ΔT_{eff} , for a normal room.

One important implication of this result is that the $\delta G_{\text{H}^+}^*$ result occurring here is **not** due to a thermodynamic **internal energy**, ΔE , change but to an **information change**, ΔI^* , process that automatically generates a **thermodynamic entropy** decreasing process wherein $\Delta S = -\Delta I^*$ ^(12,13).

At a later Reconnection workshop in Los Angeles, (July 2007), two different pH-electrodes were utilized. They yielded the $\delta G_{\text{H}^+}^*$ -plot results of Figure 27. Here, one notes that each electrode has its own “personality” (depends on electrode history as well as make and manufacturer) with electrode I being more responsive than electrode II.

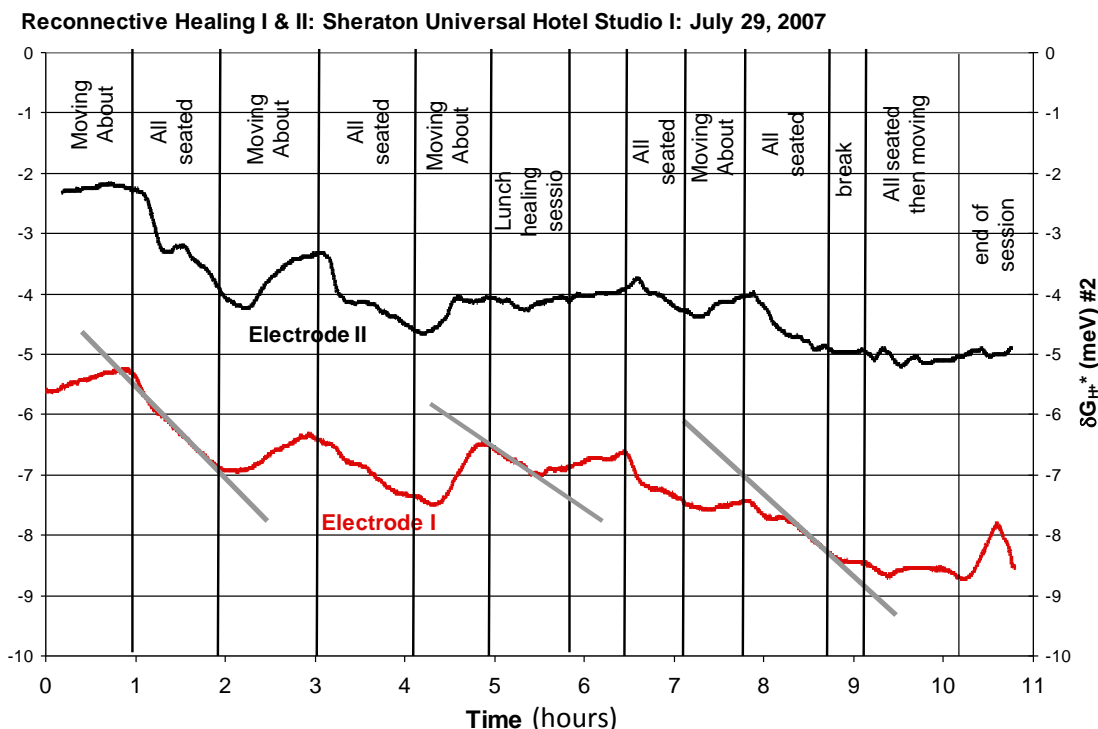


Figure 27. ΔG^*_{H+} for the space vs. time.

Following the electrode data, one notices a strong correlation of periods of almost constant downward slope ($|\Delta G^*_{H+}|$ is increasing) of ΔG^*_{H+} with time when either Dr. Pearl or the teaching assistants were lecturing onstage. It appears as if an entrained coherence between the on-stage speaker and the audience is **meaningfully** controlling the pH-measurement equipment. This entrained coherence is quickly broken when the speaker and the audience take a short break and begin to move around the room and talk with each other. This, in turn, causes a reversal of the slope in the $\Delta G^*_{H+}(t)$ -plot every time this short relaxation break occurs.

One of the closing observations of this section, is that (1) during speaker on-stage presentations to the audience, one observes that the **magnitude** of ΔG^*_{H+} always seems to increase at \sim a constant slope with time. This signals a constant rate of information production, $d\Delta I^*/dt$, and thus an equal rate of thermodynamic entropy annihilation ($d\Delta I^*/dt = -d\Delta S/dt$ which leads to $-TdI^*/dt = \Delta G^*_{H+}$). Also, (2) during the audience standing, moving around and talking to each other, the magnitude of ΔG^*_{H+} always seems to **decrease**. This signals that net excess positive thermodynamic entropy production is occurring during these semi-chaotic intervals of relaxation.

The closing item is a quantitative thermodynamic free energy description in terms of its component parts. The Gibb's free energy G , is given by

$$G = PV + E - T \left(S_0 + \sum_{m=4}^z \sum_{n=0}^{\infty} \Delta I_{nm}^* \right) \quad (4)$$

Here, P=pressure, V=volume, E=internal energy, T=temperature, S=entropy, ΔI_n^* =nth increment of information created and m is the dimension wherein the increment of information is created. At our normal reality (m=4-distance-time), the U(1) gauge state, the Boltzman Constant is so small that ΔI_{14}^* is quite small. As m increases, this author expects that the analogue of the Boltzman Constant is significantly increased.

The psychotherapy procedure of EFT tapping of various acupuncture points (see Figure 28) activates the PV-term of Equation 4.

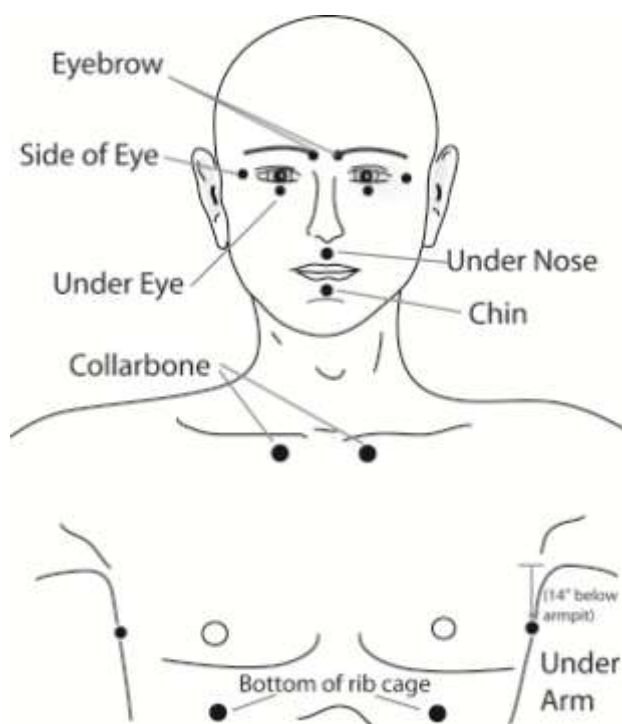


Figure 28. EFTA Acupressure Points

2. Should Psychotherapy be Treated as a “Systems” Event?

The experimental findings of Part 2 in this paper indicate that there is now a growing connectivity between any one part of nature and another. Any one of us can, to some degree, influence all biological lifeforms around us by our biofield emissions and the information that they carry whether we consciously intend it or not. Abundant experimental data exists to illustrate that we humans are highly malleable to our expectations, belief systems and intentions⁽¹⁷⁻¹⁹⁾. Just for a moment consider the psychophysiological principle” which states⁽²⁰⁾

Every change in the human physiological state is accompanied by an appropriate change in the human mental-emotional state, conscious or unconscious.
Conversely, every change in the human mental emotional-state, conscious or unconscious, is accompanied by an appropriate change in their physiological state.

Awareness of and the application of this principle has led to significant human control of one's own internal states plus biofeedback tools to alter one's own physiological activity, behavior and consciousness.

Expanding on the foregoing, it is useful to consider the random event generator (REG) experimental research of Jahn and Dunne⁽²¹⁾ and the follow-on research of Nelson and Radin⁽²²⁾. Jahn and Dunne⁽²¹⁾ used the general public as their subject pool, asking them to concentrate their thoughts on the REG to produce more ones than zeroes or vice versa. They proved again and again that the general public could influence the machine and that some measure of "order" was introduced into the random disorder of the REG. although the effect size was observed to be small, on average, the probability that such an effect could occur by random chance was **less than one in a billion**.

Roger Nelson⁽²²⁾ expanded this work by first applying it to meditation groups on college campuses with very similar results. Then, via the internet, he connected 40 REGs located at various sites around the world to his own laboratory computer at Princeton and continuously recorded REG data from all of these global sites simultaneously. He found that, most of the time, the collective graph was flat. However, at anomalous times when the global television audience reached a billion or so viewers (Princess Diane's funeral, the September 11 Twin-Towers attack, "Super Bowls", "Academy Awards", etc) significant departures in recorded randomness was observed in Nelson's "Global Consciousness Project" data.

What one is observing here is statistically significant changes in **coherence length in time** both locally and globally. This can be compared with the IHD results given in Part (2) of this paper wherein the coherence length of molecules in a room (air, water and pH) change from the length of a few molecular lengths of ~a millionth of a centimeter **at most** to over 10 feet **at least** when the gauge state of the room has been lifted from the uncoupled U(1) state to a partially mixed SU(2)/U(1) gauge ratio via an IHD.

To expand the "strangeness" further, in 1999, Enserink⁽²³⁾ wrote a short but very interesting article about how greatly the magnitude of **the Placebo Effect** in double-blind pharmacological studies had grown in the previous 15 years. He pointed out that, when companies started testing drugs for obsessive-compulsive disorder back in the mid-1980's, the placebo response was negligible relative to the treatment response (less than 20%). As time went on, the placebo response percentage began to creep upwards, up to a point that one could conclude that some clinical trials failed because of a high **placebo response factor**. **An ~1998 assessment provided a meta-analysis of 19 anti-depressant drug trials** which revealed that the placebo effect, on average accounted for ~75% of the effect of **real** drugs⁽²³⁾. Using our psychoenergetic science results of Part (2), is there a way that we might begin to

understand these strange results? Perhaps! Let us consider the following where we consider a psychotherapy event as a general “systems” event.

From Equation 3, as a zeroth order approximation to the formation of duplex, reciprocal, subspaces wherein one of the two subspaces is distance-time, the second term on the right is at least a mathematical vector and possibly a mathematical tensor of some order⁽²⁴⁾. For simplicity, we will call it a vector. The first term on the right can also be considered as a vector. However, if in fact it is a mathematical scalar, it is just a vector with a zero phase angle since any vector, \underline{Q} , can be written as

$$\underline{Q} = R(k) \exp[i\theta(k)] \quad (5)$$

where R is the amplitude, θ is the phase angle, k is the coordinate of the space and $i=(-1)^{\frac{1}{2}}$, the imaginary number symbol. Thus, when $\theta=0$, $\exp(0)=1$ and $\underline{Q}=R(k)$, a scalar quantity.

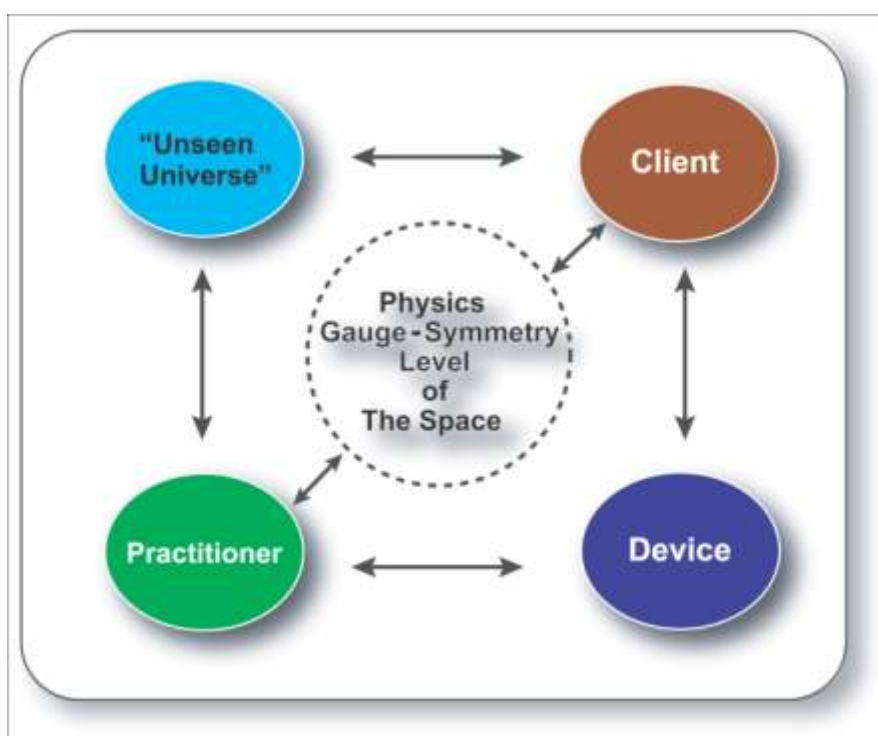


Figure 29. Every one of us can influence all biological lifeforms around us via our biofield emissions and the information that they carry whether we intend to or not.

Consider Figure 29 as a simple picture of a psychotherapy event. Often, all five components of this figure are intimately involved in the overall interaction event between the practitioner and the client so it definitely must be mathematically considered, at least in R -space, as an interacting system of vectors. The conceptual mathematics will be developed in Appendix II and the meaningful concepts will be expressed here in the text via several event examples.

Before jumping to a system of vectors as large as Figure 29, consider Appendix O to understand how a number, α , with a real and an imaginary part like $\alpha=x+iy$ is conceptually plotted as a vector with

an amplitude and a phase angle. Further, one can also begin to understand how two vectors Q_A and Q_B can be added, always in a head to tail fashion, to produce a resultant, Q_M , via what is called an Argand diagram.

Turning to Figure 30, we consider two vectors, Q_A and Q_B plus their sum, Q_M .

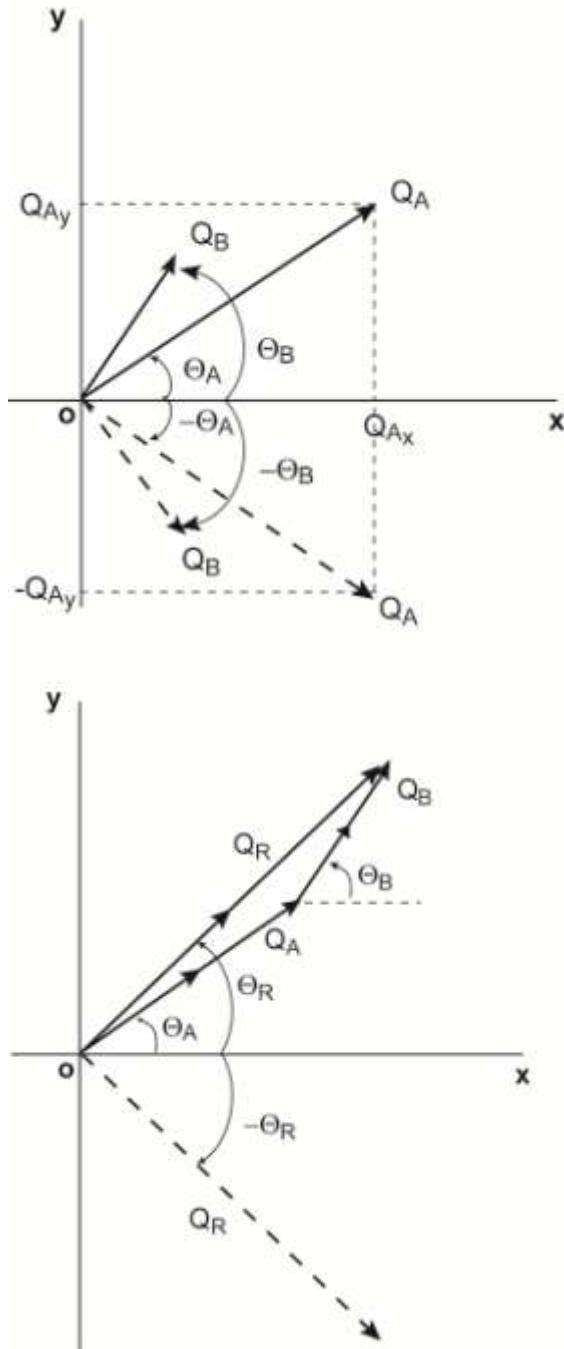


Figure 30.

Phasor diagrams for rotating vectors.

This is an extremely important and subtle point in our normal physical reality, called the EM state. Many of the important qualities of interest are vectors and thus, for a system of multiple parts, there is always an **information entanglement between the parts** unless they are **totally** isolated from each other.

Here, each vector is defined as in Equation 5 by magnitudes, R_A & R_B , (the lengths of the arrows), phase angles, θ_A & θ_B (the angle between the particular arrow and the horizontal axis) and their complex

conjugates (the dashed versions below the x-axis). One important point to note here is that the mathematical product of a vector and its complex conjugate yields just the square of the amplitudes R_A^2 & R_B^2 . This eliminates the phase angle factors and yields the intensity values, I_A & I_B , which is all that we can measure experimentally.

The vector summation of Q_A & Q_B is illustrated in Figure 30b and leads to the resultant vector, Q_M . The procedure of vector summation is to draw the two vectors in a head to tail configuration so that the head of vector Q_A touches the tail of vector Q_B . The resultant vector, Q_M , is just the arrow joining the tail of Q_A to the head of Q_B , so that it has magnitude, Q_M , and phase angle θ_M . Thus, the R-space intensity pattern for the sum of these two vectors, Q_A & Q_B , is just R_M^2 , obtained by multiplying the vector, Q_M , by its complex conjugate.

Although the magnitude of Q_M is an important quantity, it is the resultant **intensity** pattern, I , that is most important and this quantity is given by the mathematical square of the amplitude. Using Figure 30 and the Pythagorean Theorem, we, via some simple algebra, obtain

$$Q_M^2 = [Q_{Mx}^2 + Q_{My}^2] + 2 \{Q_{Ay}Q_{Bx} + Q_{Ax}Q_{By}\} \quad (6a)$$

$$= [Q_A^2 + Q_B^2] + 2Q_AQ_B \cos(\theta_A - \theta_B) \quad (6b)$$

The first sum of the first two terms in Equation 6b is exactly what one would have if we didn't need to treat Q_A & Q_B as vectors but could treat them as scalars (just as simple numbers). However, because, here, they must be treated mathematically as vectors, we must include the second term on the right in Equation 6b. This term always represents an **information entanglement** between these two vectors. This kind of result applies to the superposition of **any** two or more vectors.

For the first complex example, let us consider a typical clinical trial involving the subsystems (1) a doctor or doctors, D, (ii) a specific medical treatment, T, (iii) a D-space inert placebo, P and (iv) a living subject or subjects \bar{s} . This system can be conceptually considered to be information entangled with all the other subsystems just like those in Figure 29 provided that, during the trial, something has lifted the gauge symmetry state to the "coupled" state of physical reality (the mixed $SU(2)/U(1)$ gauge state). The relevant mathematical and physics concepts to be considered here are the following (see Appendices O, I and II):

- (1) In R-space, each subsystem must conceptually be represented as a vector with both amplitude, $R(k)$, and phase angle, $\theta(k)$, where each is a function of the position coordinate, k , in R-space;
- (2) The entire **system** vector, $R_s(k)\exp[i\theta_s(k)]$, is given by the vector sum (head to tail addition) of all the subsystem vectors, converted first to common units (where $i=(-1)^{1/2}$, the imaginary number;
- (3) Experimentally, one only measures the system intensity, $I_s(k)$, which involves $R_s\exp(i\theta_s)$ multiplied by its complex conjugate, $R_s\exp(-i\theta_s)$ and this eliminates the imaginary part to give a mathematically "real" quantity;

- (4) When this is worked through as in Appendix II, for R-space, I_s is given by two groups of terms, (a) the sum of squares of each vector amplitude and (b) the sum of pairs of different vector amplitudes multiplied by the cosine of the phase angle difference between these pairs and
- (5) The total information entanglement for this medical system is given from Section 4 above to yield for the placebo, P, in the zeroth order approximation

$$Q_{MP} = Q_{ep} + \alpha_{eff} \int_k \left[R_p^2 + 2R_p \left\{ R_D \cos(\theta_p - \theta_D) + \right. \right. \\ \left. \left. R_T \cos(\theta_p - \theta_T) + \overline{R_S} \cos(\theta_p - \overline{\theta_S}) + \right\} \right] dk \quad (7)$$

Thus, although $Q_{ep} \sim 0$ because the placebo is essentially inert in U(1) gauge state, D-space at the electric/induced magnetic dipole atomic, molecular level; Q_{MP} is definitely not zero provided that the **system** is functionally at the partially **coupled state** of physical reality where $|\alpha_{eff}|$ is greater than zero.

Of course, this is only conceptual reasoning and we await the future to properly provide a quantitative vector or tensor representation of D, T, P and $\overline{C_S}$.

From the Enserink observations⁽²³⁾, since the measured placebo effect grew from less than ~20% to ~75% in 25 years, Equation 7 indicates that α_{eff} has been steadily growing in magnitude in our cosmos for some time.

In example 2 (see Appendix II), a careful examination of the Voll Dermatron device, when separated from its Figure 29 setting, shows it to operate on standard U(1) gauge, electrical engineering principles so that the U.S. government regulatory agency shut down their legitimate use and confiscated all the instruments because the practitioners claimed that this particular instrument allowed them to be able to make amazingly beneficial diagnosis for their clients. Is this another instance of the human/device interaction effect, when the device is used in a **system-event** as in the REG work of Jahn and Dunne⁽²¹⁾ and Nelson and Radin⁽²²⁾?

In Example 3, the experimental work of Tiller and colleagues in References (1, a, b and c) show that a particular device, the "IHD", whose strange U(1) gauge state electrical circuitry and unique imprinting process allows them to seemingly interact strongly with the "unseen" sector of the system in Figure 29 to co-create "higher than distant-time-dependent phenomena that function in our day-to-day world. Certainly, these three examples require serious changes in our conceptual thinking with respect to psychotherapy and the healing arts!

Human Consciousness and Kinesiology as a Measurement Tool

The dictionary definition of consciousness invariably ties it to awakeness and awareness; however, over the centuries, thousands of authors have implied the word's vast importance to humanity and human evolution far beyond these awakeness and awareness labels. This general topic has been seriously discussed in my four books dealing with psychoenergetic science^(1,19) and most recently as Chapter 5 in Reference 25⁽²⁵⁾. Probably Ravindra⁽²⁶⁾ has placed his finger on the reason why

the orthodox professional establishment has avoided looking at the experimental data that clearly shatters their most fundamental metaphysical assumptions. He quite properly points out that a higher and more broadened consciousness cannot be understood in terms of, or by remaining at, a lower or more narrow consciousness.

Although we don't have an agreed upon definition of consciousness, we probably all agree that human consciousness manipulates information:

- in the form of letters into words into sentences, etc,
- in the form of numbers into sums or multiplicands, etc, and
- in the form of symbols into equations, etc.

As discussed earlier, an increase in information, ΔI^* , via some process yields an equal decrease, $-\Delta S$, in thermodynamic entropy^(12,13).

As a simple metaphor to begin to obtain a little insight into the word "consciousness", let us consider the information capacity inherent in a typical electrical communication system (see Figure 31)⁽²⁷⁾.

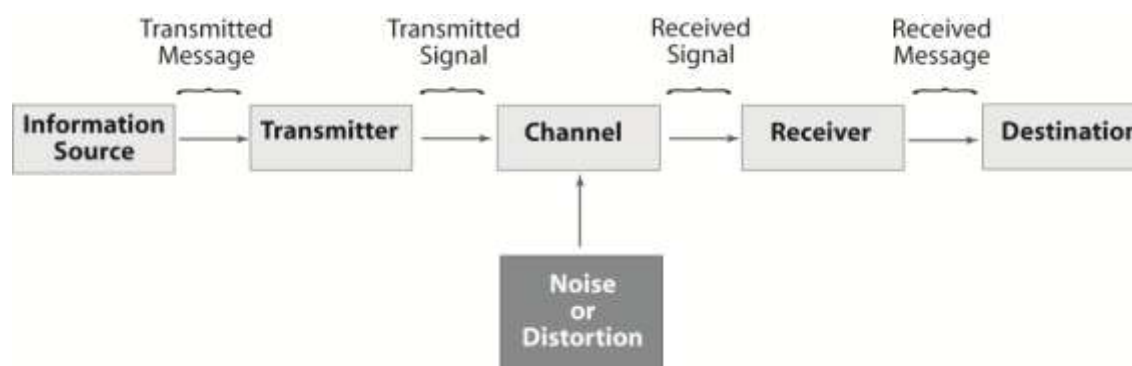


Figure 31. Important components in a standard electrical communications system.

The first element of this system is an **information source** (a taped symphony for example). The output of the information source is called a **message** (the music). The next element of the system is a **transmitter** which transforms the sound into electrical impulses, places these impulses on what is called a **carrier wave** via a process called mixing and modulation and then radiates this via an antenna into the next element of the system called the communication **channel**.

The input to the transmitter is the message and the output is the signal. The channel which may be air, an electric cable or an optic fiber, is the medium used to transmit the signal from the transmitter to the receiver. While going through the channel, the electric signal may be altered by noise or distortions (thunderstorms or other electrical disturbances). The output of the channel is called the received signal, supposed to be in some sense a faithful representation of the transmitted signal.

The next element in the system is the **receiver** (radio, TV, etc) which operates on the received signal and attempts to reproduce from it the original message. It will ordinarily perform an operation which is approximately the inverse of the operation performed by the transmitter. The two operations may differ somewhat, however, because the receiver may also be required to combat the noise and distortion in the channel. The input to the receiver is the received signal and the output is the received message (the sound patterns of the symphony). The last element of this communication system is the **destination** (the ear of the listener, etc).

From communication theory⁽²⁷⁾ we find that, for the simple system of Figure 31, the maximum ability to communicate information is determined by the channel capacity, \tilde{C} , which is given by

$$\tilde{C} = \Delta\nu \log_2(1 + P/N). \quad (8)$$

In Equation 8, $\Delta\nu$ is the channel bandwidth (in this case, it is the effective frequency range of the transmitter); P is the signal power of the transmitter and N is the noise level of the channel for the transmitter. The ratio, P/N , is called the signal to noise ratio. The mathematical function, $\log_2 A$, is called the logarithm to the base 2 of A and is just a number which varies as the magnitude of A varies. Since, here, $A = 1 + P/N$, it varies in the simple manner illustrated by Figure 32.

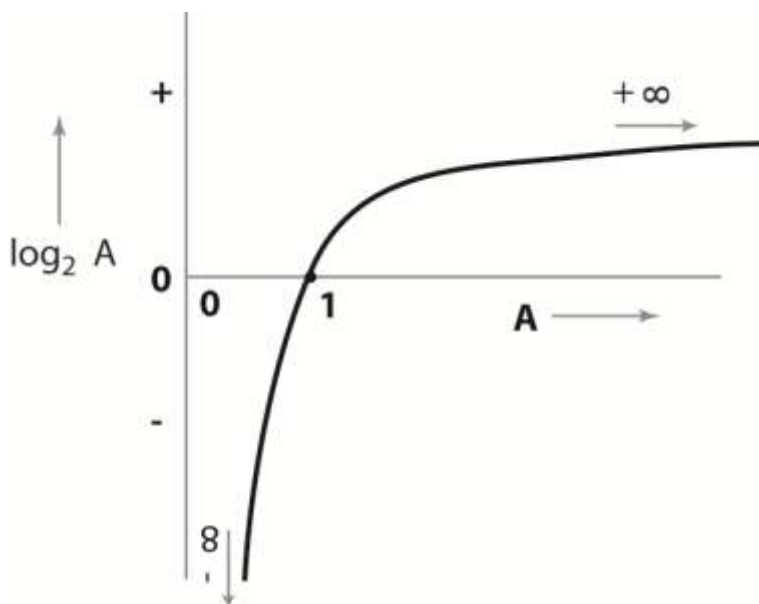


Figure 32. Functional variation of the logarithm (A) as a function of A .

From electrical engineering we find that $\Delta\nu$ (video) is $\sim 1000 \Delta\nu$ (audio). Thus, the channel capacity and the information transferred for a video transmission is about 1000 times that for an audio transmission (which may be the basis for the statement “one picture is worth a thousand words”). One

also finds that, the higher is the frequency ν_0 , of a resonating system, the larger is $\Delta\nu$ and, thus, the greater is the information channel capacity and transferred potential.

For a human, the foregoing seems to imply that this metaphor translates to “the greater is the inherent level of the human’s consciousness”⁽¹⁹⁾. To expand this metaphor a little, a human can expand their capacity to act as a channel for the evolution of humanity, or for any other purpose, Equation 8 shows us that he/she must grow in consciousness to increase $\Delta\nu$. He/she must increase their ability to generate or transmit a high-power signal, P , and she/he must quiet their fears and internal uncertainties in order to significantly reduce their internal noise chatter, N ⁽¹⁹⁾.

To make the foregoing somewhat operational in humans, one needs to turn to the fields of applied kinesiology and dowsing^(28-33,19). Kinesiology is a type of feedback utilizing subconscious muscle response to detect “stressors” within the body. Kinesiology uses manual monitoring of specific muscles, which may either “lock” and hold strong or “unlock” and **give**, to determine stressors not only within the muscles themselves but also within interfacing **subconscious** body systems. These systems include not only the generally recognized autonomic and proprioceptive feedback of the nervous system but also the subconscious emotional and mental processes underlying our feelings and thoughts. More importantly, from the point of view of our experiments, the subconscious muscle system also interfaces with key subtle energy systems of the body, (1) the acupuncture meridian system of Chinese medicine and (2) the chakra-nadi system of the Yogis.

Initially, kinesiology was applied only to muscle imbalance and feedback of subconscious nerve reflexes but, early on, a fairly consistent experimental relationship was observed in applied kinesiology (AK) between specific organ or gland dysfunction and weakness in specific muscles^(30,31). These findings led to the development of the muscle-organ/gland-Chinese meridian matrix, in which imbalances within organs or glands and their associated meridians were linked to specific muscle imbalances^(32,33). Thus, when a muscle is monitored manually, it can respond to disturbances or imbalances within the Qi flows of the Chinese meridians or the Pranic flows within the chakra-nadi system by suddenly “giving under pressure” when linked to a meridian or chakra via touching the acupoint or nadi point while simultaneously monitoring the muscle. This permits detection of energetic stresses affecting the body’s function.

The Chinese meridian Qi-flows and the chakra-nadi Pranic-flows directly affect the physiological function of the organs, glands and nervous system, and are important for the maintenance of homeostasis. Detection of imbalances and stressors affecting these systems thus allows us a direct means for locating effective acupressure corrections to eliminate these imbalances and so normalize physiological function.

Dr. John Diamond⁽³⁰⁾, a psychiatrist, seriously expanded this type of research by using the AK response research method to investigate human attitudes, human emotions, human belief systems, etc. Thus, was born, the advent of behavioral kinesiology as a serious probe to investigate human consciousness. One of the next major extensions of this work can be found in that of Krebs⁽³¹⁾ and Hawkins^(34,35). The latter’s investigations both **categorized** and numerically **calibrated**, via a simple

model, various levels of human consciousness. Although the Hawkins' logarithmic scale is somewhat arbitrary, it is potentially very useful when utilized properly and as a relative comparison between various members of same category of entity (here, our selected category will be humans). The Hawkins' logarithmic scale is somewhat related to Equation 8 but is (1) to the base 10 rather than base 2, (2) the internal bracket variable relates to human consciousness, c^* , within the range 1-1000 rather than signal to noise ratio and (3) the channel bandwidth is taken as unity.

With the use of this scale, Hawkins has developed a "map of consciousness" (pp 52-53 of Reference 34) that is very useful as a relative scale and merits serious attention by others. However, as with any dowsing technique⁽¹⁹⁾ that depends on the conscious or unconscious interrogation of one's own unconscious mind to provide a yes or no answer with high reliability via a specific muscle response, (1) if there is a serious personal/emotional connection to the specific answer, the reliability of the response is questionable, (2) if a different dowsing **technique** is utilized between different investigators, the relative quantitative responses can have large error bars between them and (3) for any unique dowsing technique, a significant level of practice is needed to meaningfully reduce the size of the quantitative error bars. However, regardless of such potential weaknesses in human use of the technique, it is very valuable to acquire such a skill as **one** tool in a "tool box" with other skills. Humanity has much to learn in seriously following the Hawkins' investigative path^(34,35). Likewise, humanity has much to learn in seriously following the work of Krebs and McGowan⁽³⁶⁾.

To close this "consciousness" section, my present working hypothesis of how a human grows in consciousness is illustrated via the upward expanding spiral of Figure 33.

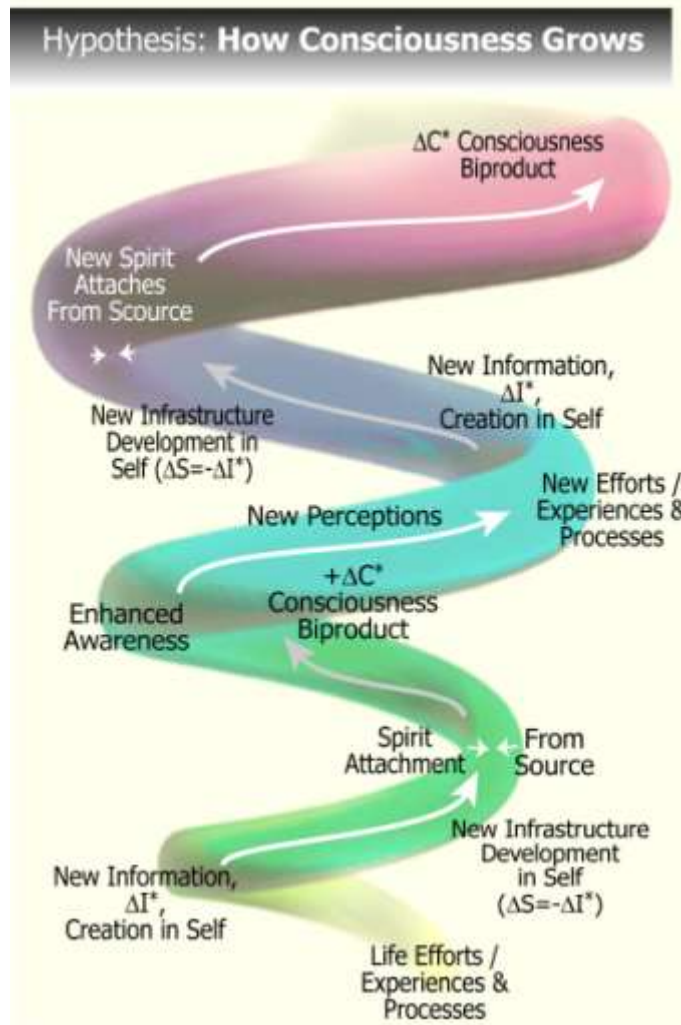


Figure 33. A hypothesis of how consciousness grows

Here, we start with the various experiences, processes and self-efforts generated in our life. These create new information, ΔI^* , at various levels of self. In turn, this materializes as new infrastructure development at these levels of self (where $\Delta S = -\Delta I^*$). In turn, from **source**, more spirit attaches to this new infrastructure and a **biproduct** of this reaction creates a, ΔC^* , increase in consciousness. In turn, this leads to an enhancement of awareness which creates new perceptions in mind of the self. In turn, this leads to new experiences, processes and personal efforts on the part of the self (and we have completed one turn of the spiral re our self's growth in consciousness by an amount ΔC^*). This feedback loop continues and continues over lifetimes so long as we keep making, $\Delta I^* > 0$, creations of new information in our self.

A Few Closing Words on the Consciousness of Masters and Saints

First, if we consider Yogananda and the general observation that, on his physical death (departure of his soul), his biobodysuit did not begin to manifest decay until **after** 40 days had passed. I interpret this as a natural consequence of his very high level of **consciousness**(C^*) when he left this realm. It was such that his tissues, organs and bones were continually being subtle radiations-fed from his magnetic-information wave, invisible body which eventually begins to decay at about 40 days. In today's world, this is a remarkable feat so that, on the David Hawkins' scale of consciousness, we are looking at a C^* -value in the 800-900 range. This feat is akin to those materialized into the Maitreya Buddha relics⁽³⁷⁾. Some of the latter are several thousand years old and still radiate the quality of loving kindness into this earth-plane level of physical reality⁽³⁷⁾. Not only that but we⁽³⁸⁾ have been able to interact with them, first by having our initially **unimprinted** host devices just in their presence for 72 hours and then, using one of these devices to **significantly** change the pH of water just by **asking** that they allow the gauge state of their loving kindness essence be quantitatively measureable by our pH-probe system^(B). In response, that system fairly quickly (~2 weeks) manifested a Δ pH-change of +3 pH units (~70 meV)⁽³⁸⁾ see Figure 34).

As a type of addendum to this last section of White Paper XXIX, I wish to point the reader towards the serious work of Joan Carroll Cruz^(39,40) who carefully compiled and recorded both the **incorruptible** nature of the bodies of various catholic saints and the **Eucharistic phenomena** manifesting in the lives of such saints. Such data underscores the relevance of this section to psychoenergetic science and our next paradigm of physics!

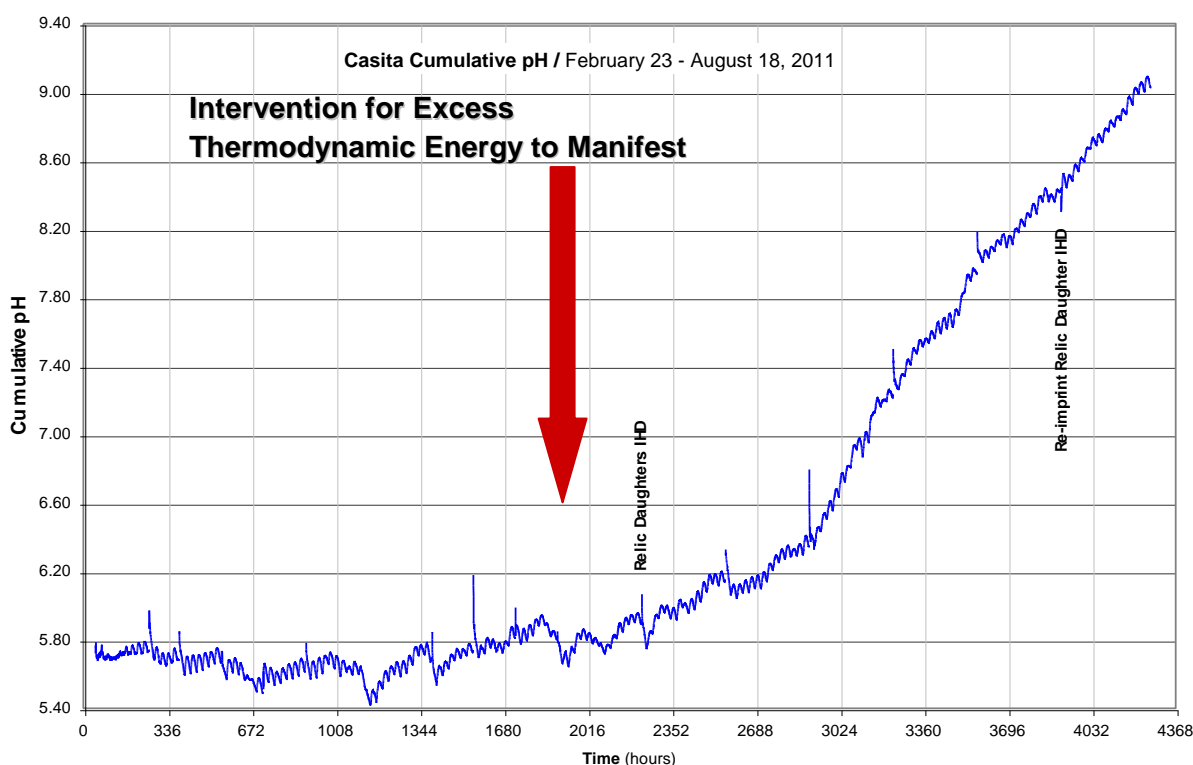


Figure 34. Cumulative pH water change associated with the Relic-IHD. Following the intention (red arrow) for the excess thermodynamic energy to manifest in the experimental space (Tiller home casita), the change in pH water subtle energy detector was robust over the following 2 months (see text).

References

- 1(a) W. A. Tiller, W. E. Dibble, Jr., and M. J. Kohane, Conscious Acts of Creation: The Emergence of a New Physics (Pavior Publishing, Walnut Creek, CA, USA, 2001).
- (b) W.A. Tiller, W.E. Dibble, Jr., and J.G. Fandel, Some Science Adventures with Real Magic, (Pavior Publishing, Walnut Creek, CA, 2005).
- (c) W.A. Tiller, Psychoenergetic Science: A Second Copernican-Scale Revolution, (Pavior Publishing, Walnut Creek CA, 2007).
2. Y. P. Terletskii, Paradoxes in the Theory of Relativity, (Plenum Press, New York, NY, 1968).

3. P. Werbos, "What do neural nets and quantum theory tell us about mind and reality?", in No Matter, Never Mind, eds. K. Yasue, M. Jiba and T.D. Senta (John Benjamins Publishing Co., Philadelphia PA, 2001).
4. C. Misner, K. Thorne and J. Wheeler, Gravitation (W.H. Freeman and Co., San Francisco, 1970) Ch 43, 44.
5. R.M. Eisberg, Fundamentals of Modern Physics (John Wiley and Sons, Inc., New York, NY) pp 140-146.
6. W.A. Tiller, "Why has orthodox physics neglected the superluminal velocities of DeBroglie pilot wave components?" (www.tiller.org, White Paper #V).
7. W.A. Tiller and W.E. Dibble, Jr., "new experimental data revealing an unexpected dimension to materials science and engineering", *mat. Res. Innovation* (2001) 5: 21-34.
8. K. Moriyasu, An Elementary Primer for Gauge Theory (World Scientific Publishing Co. Pte. Ltd. Singapore, 1983).
9. W.A. Tiller, "Towards understanding the internal symmetries of nature: Gauge symmetry states", (www.tiller.org, White Paper #XIX).
10. W.A. Tiller and C.R. Reed, The Effect of Intention on Decreasing Human Anxiety and Depression via Broadcasting from an Intention-Host Device-Conditioned Experimental Space (www.tiller.org, White Paper #XVI, a much reduced version of "10" written by Tiller in 2008 with Reed's permission).
11. W.A. Tiller, W.E. Dibble, Jr., T. Ludwig and M. Bischof, "Towards understanding long-range broadcasting of specific intentions" (www.tiller.org, White Paper #XXVIII, 2012).
12. C.E. Shannon, "A mathematical theory of communication", *a Bell System Technical Journal*, 1948, 27, 379-656 (October).
13. L. Brillouin, Science and Information Theory, 2nd Ed. (Academic Press, New York, NY, 1962, Chapter 12).
14. R. Bracewell, The Fourier Transform and its Application (McGraw-Hill Book Co, New York, 1965).
15. W.A. Tiller & W.E. Dibble, Jr., "An experimental investigation of some Reconnective healing workshops via a unique subtle energy detector" (www.tiller.org, White Paper #XI, 2006).
16. W.A. Tiller, "An introduction to psychoenergetic science and information medicine" (www.tiller.org, White Paper #XXIV, 2012).
17. I. Rock, The Nature of Perceptual Adaptation (Basic Books, New York, NY, 1967).

18. P. Norris, "Current conceptual trends in biofeedback and self-regulation", *Subtle Energies and Energy Medicine*, 1999, 10, 61 – attributed to S. Wolf, Educating Doctors (Transaction Publisher, London, U.K.).
19. W.A. Tiller, Science and Human Transformation: Subtle Energies, Intentionality and Consciousness (Pavior Publishing, Walnut Creek, CA, 1997, Ch 5).
20. E. Green and A. Green, "Biofeedback and self-regulation", *Subtle Energies & Energy Medicine*, 1995, 10, 17-134.
21. R.G. Jahn and B.J. Dunne, Margins of Reality (Harcourt, Brace, Jovanovich Publishers, New York, NY 1987).
22. R.D. Nelson and D.I. Radin, "Statistically robust anomalous effects: Replication in random event generator experiments", Research and Parapsychology, Eds. L Henckle and R.E. Berger (Scarecrow Press, Netuchen, NY, 1988, pp 23-26).
23. M. Enserink, "Can the placebo be the cure?", *Science*, 1999, 284, 238.
24. W.A. Tiller, "Towards understanding the internal symmetries of nature: Gauge symmetry states" (www.tiller.org, White Paper XIX, 2011).
25. E. Herr, Consciousness (Rainbow Bridge Books, LLC, Faber, VA, 2012).
26. R. Ravindra, "Yoga and the future science of consciousness: Some notes", *Network*, 1998, #66, 8.
27. J.R. Pierce, Electrons, Waves and Messages (Hanover House, New York, NY, 1956).
28. G.J. Goodheart, Jr., "Applied kinesiology" (privately published, Detroit, 1964).
29. D.S. Walther, "Applied kinesiology, Vol. 1" (SdC Systems DC, Pueblo, CO, 1981).
30. J. Diamond, Behavioral Kinesiology (Harper & Row, New York, NY, 1979).
31. C.T. Krebs, A Revolutionary Way of Thinking (Hill of Content, Melbourne, Australia, 1998).
32. Y. Omura, Meridians, "Acupuncture Points and Neurotransmitters of the Central Nervous System Localized by Bi-digital O-ring Test" in Energy Fields in Medicine (The John E. Fetzer Foundation, Kalamazoo, MI, 1989) pp 395-399.
33. R. Utt, "Stress, the nature of the beast, Volume I" (International Institute of Applied Psychology, Tucson, AZ, 1977).
34. D.R. Hawkins, Power Versus Force: An Anatomy of Consciousness, (Veritas Publishing, Sedona, AZ, 1995).
35. D.R. Hawkins, The Eye of the I (Veritas Publishing, Sedona, AZ, 2001).

36. C.T. Krebs and t. McGowan, The Fundamentals of Energetic Kinesiology (Handspring Publishing, U.K., 2013).
37. N. Manek, "Symmetry states of the physical space: An expanded reference frame for understanding human consciousness". *Journal of Alternative and Complementary Medicine* 2012; 18: 83-92.
38. W.A. Tiller, J.E. Tiller, W.E. Dibble, Jr., R. Manek and N. Manek, "The Buddha relics and evidence of physical space conditioning with unimprinted intention host devices", *JACM* 2012; 18: 379-381.
39. J.C. Cruz, The Incorruptibles (Tan Books, Charlotte, NC, 1977).
40. J.C. Cruz, Eucharistic Miracles (Tan Books, Charlotte, NC, 1987).

Appendix O, On Understanding the Transition of a Mathematical Scalar to a Vector in a Mixed "Real"/"Imaginary" Substance

For a mathematically complex system; i.e., consisting of "real" and "imaginary" parts, they are readily represented via the use of an Argand diagram (see Figure 01), consisting of a real axis and a perpendicular imaginary axis.

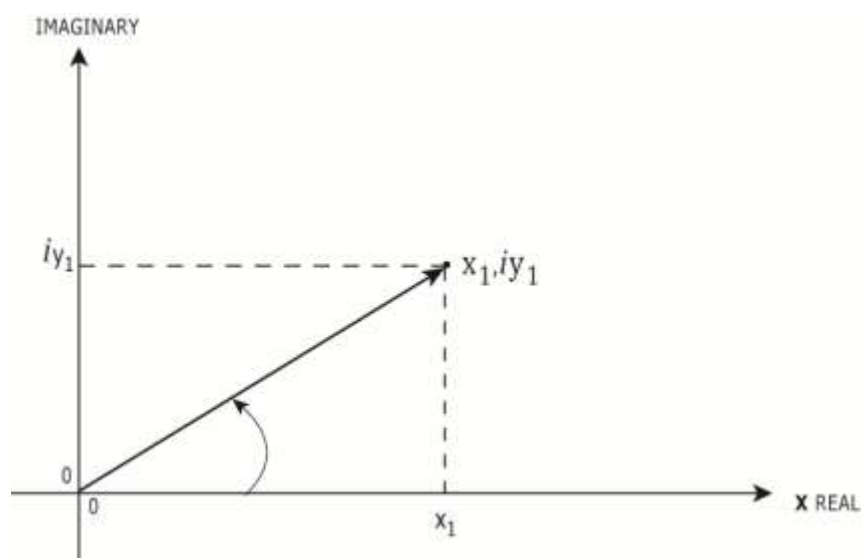


Figure 01. Representation of the mathematically complex point (x, iy) .

For a representation of the sum of two vectors $(x_1, iy_1) + (x_2, iy_2)$, see Figure 02 ($Q_A + Q_B$). Here, Q_M is the vector sum of Q_A & Q_B .

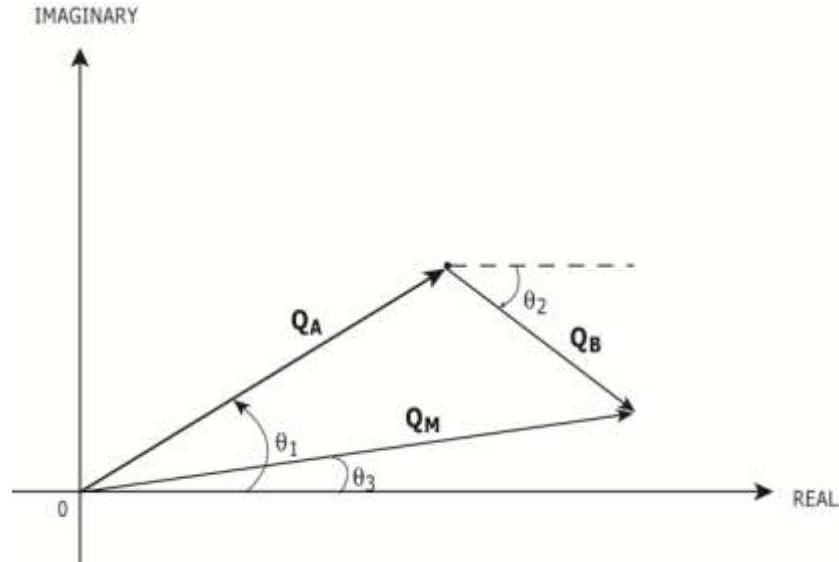


Figure 02. Argand representation for a two vector sum.

Appendix I, Outline of the Relevant Mathematics for the Deltron-Modulated, Fourier Transform in the Evaluation of $Q_m(t)$ from $Q_e(t)$.

One starts with the time-dependent, D-space experimental value of, $Q_e(t)$, (or the spatial value at fixed t). The standard Fourier Transform-pair relationships are given by Reference 14.

$$F(v) = \int_{-\infty}^{+\infty} Q_e(t) e^{-i2\pi vt} dt \quad (I-1a)$$

And

$$Q_e(t) = \int_{-\infty}^{\infty} F(v) e^{+i2\pi vt} dv . \quad (I-1b)$$

Expanding equations I (1) to become the deltron-modulated, Fourier Transform-pair yields

$$G(v) = \int_{-\infty}^{+\infty} Q_e(t) C_\delta(t, v) e^{-i2\pi vt} dt \quad (I-2a)$$

And

$$Q_e(t) C_\delta(t, v) = \int_{-\infty}^{\infty} G(v) e^{+i2\pi vt} dv \quad . \quad (I-2b)$$

This is how the first step of an equilibrium R-space conjugate is formed for a given D-space temporal value of Q_e . Next, the R-space intensity, $I(v)$, is given in the following form by

$$I(v) = G(v) G^*(v) , \quad (I-3)$$

where G^* is the complex conjugate of G (by changing all $-i$ to $+i$ in $G(v)$).

Finally, we integrate $I(v)$ over the entire v -domain of R-space to yield

$$\alpha_{eff}(t) Q_m(t) = \int_{-\infty}^{+\infty} I(v) dv \quad . \quad (I-4)$$

Here, in Equation (I-2a), $C_\delta(t, v)$ is the **unknown** deltron modulation function (that must ultimately be determined via experiment. In its most general form, $C_\delta(t, v)$ can be given by

$$C_\delta(t, v) = \sum_{n=-\infty}^{+\infty} d_n e^{in\omega t} \sum_{m=-\infty}^{+\infty} d_m e^{im\Gamma t} \quad (I-5)$$

where $2d_n = a_n - ib_n$ ($n \geq 0$) and $2d_m = a_m + ib_m$ ($n < 0$), in general, etc. In the zeroth order approximation to get a “feel” for the solution, one makes all $d_n = 0$ for $|n| > 0$ and all $d_m = 0$ for $|m| > 0$ so that $\alpha_{eff} =$ a constant which can be placed outside the integral sign in Equation (I-2a) which is just proportional to Equation (I-1a) and this has been given in many mathematical tables for various forms of $Q_e(t)$.

Reference (1c) provides a non-mathematical description of the Fourier Transform plus many pictorial examples on pp 117 to 124. In addition, References 8 and 9 require an expansion of our thought processes to include gauge symmetry state considerations plus the sometimes need to shift from Abelian to non-Abelian algebra.

Appendix II, Relevant Conceptual Mathematics for a General System Event

Considering Figure 29 as a four element R-space system wherein the gauge state of the space is a mixture of both a $U(1)$ matrix with an internal infrastructure of $SU(2)$ domains. Thus, the entire system conceptually consists of five uniquely different vectors with each vector represented by Equation 5 of the main text.

Setting α_{eff} equal to the space-gauge symmetry component, from Appendix I, we now have Q_m being determined by the other four vector contributions defined with subscripts P, D, C and U to represent, respectively, practitioner, device, client and unseen. Therefore, the total system vector, $R_s(k)\exp(i\theta_s)$, is given by the vector sum as in

$$R_s(k)e^{i\theta_s(k)} = R_p(k)e^{i\theta_p(k)} + R_D(k)e^{i\theta_D(k)} + R_C(k)e^{i\theta_C(k)} + R_U(k)e^{i\theta_U(k)} . \quad \text{II(1)}$$

As in Appendix I, the system intensity, $I_s(k)$ is given by

$$I_s(k) = R_s(k)e^{i\theta_s(k)} \times R_s(k)e^{-i\theta_s(k)} = R_s^2(k) = \{R_D^2(k) + R_P^2(k) + R_C^2(k) + R_U^2(k)\} \\ + 2 \left\{ \begin{array}{l} R_P R_D \cos(\theta_P - \theta_D) + R_P R_C \cos(\theta_P - \theta_C) + R_P R_U \cos(\theta_P - \theta_U) \\ + R_D R_C \cos(\theta_D - \theta_C) + R_D R_U \cos(\theta_D - \theta_U) + R_C R_U \cos(\theta_C - \theta_U) \end{array} \right\} . \quad \text{II(2)}$$

Where $i, j = P, D, C, U$.

In Equation II(2), the coordinate k has been left out for simplicity, thus, the conceptually measured amplitude of the (system-vector)², $R_s^2(k)$, can be determined from all the R_j and θ_j .

The important point to note here is that, for **the system intensity**, which is all that one can experimentally expect to measure, we have 4 singlet terms plus 6 doublet terms indicating that each of the 4 terms is intimately connected to the other 3. How one actually accomplishes this experimentally in detail for a mixed D-space/R-space system is not presently understood. However, conceptually, we can consider three application areas:

- (1) The “placebo effect” in today’s double-blind medicine where the assumption of a completely random system plus an inert placebo is used;
- (2) An electrodermal diagnostic testing system of practitioner, client and Voll Dermatron measurement device and
- (3) The Tiller intention-host device (IHD) used to metastably, significantly change the magnitude of a physical material property in today’s world.