

Quantum Biology #1: The Zero Entropy System

Readers Summary

1. Does your frequency match your reality today?
2. How do Thermodynamics, EMF, and Biochemistry intersect?
3. Does the EMF spectrum control Biochemical kinetics and fluxes?
4. What are life's semiconductor's and is this where our quantum dance happens?
5. How does evolutionary form really meet its function to explain life as we observe it?

“Everything is energy and information and that is all there is to it. Match the frequency to the reality you want and you can not help but get that reality. It can be no other way. This is not philosophy. This is physics.” – Anonymous

Biology has a great history of examining life by cutting, fixing, pinning, clamping, pressing, pulping, homogenizing, extracting and fractionating; all of which gave rise to, and reinforced, a static, atomistic view of the organism. This is a great way to drain water from a cell and miss life's critical ingredient when you study it. When we study life in this fashion it limits our ability to understand how a living animal functions in a syncytium. We can see coherent functioning in animals just by observation, but we can't reproduce it when we drain a cell of the thing that makes it coherent in the first place. We see long-range order of the action potential in neurons, rapidity, and efficiency of energy/information transduction and transfer in the brain and retina, extreme sensitivity to external cues in vision and touch, and symmetrical coupling of energy transfer along the inner mitochondrial membrane. Another observation we can make

is the noiseless transitioning and functioning of entire populations of molecules in cells.

The two greatest unifying concepts in quantum physics and quantum chemistry most relevant for understanding the organism are the laws of thermodynamics and the electromagnetic theory of light and matter. When you begin to study both and open a biochemistry book you could be put off by the complexity of reactions in cells, but you will begin to see clearly when you realize that life's organizing plan is simple. She makes an order, where there appears to be none of the environment. There is, however, an order of all nature and that order is found in quantum electrodynamic theory. How the blueprint is made however is rather counterintuitive to your beliefs. The living system of evolution is a bewildering matrix of organized heterogeneity that works in unison to minimize timing errors.

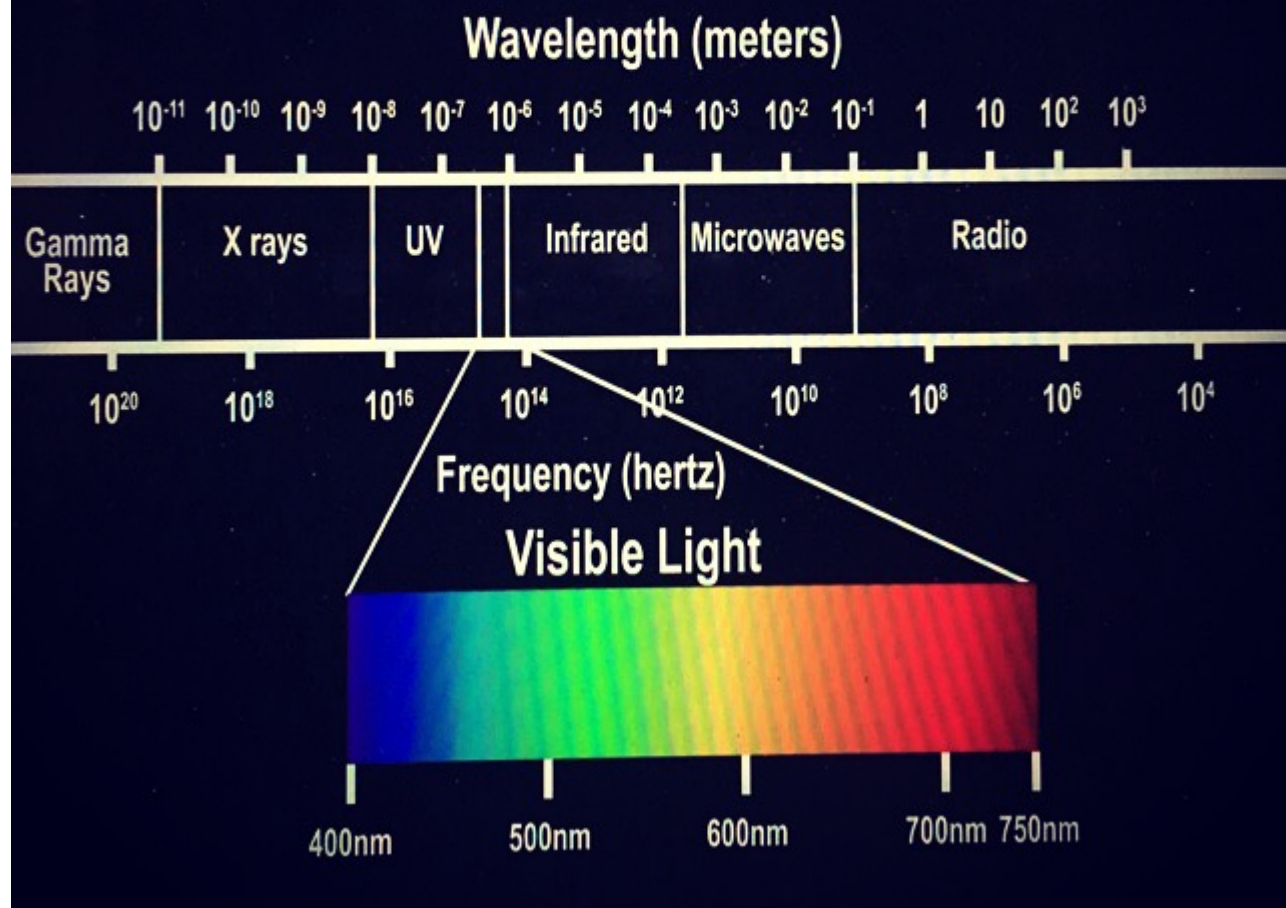
The evolution of the living matrix of life seems to be how life deals with thermodynamics problem for biology. **I have said repeatedly in EMF series, that Mitchell thesis on ATP makes no sense thermodynamically when you examine how life works in vivo and compare it to the activation energies in a living animal that has not be prepared for the research bench top as mentioned above.** Life happens in the living matrix and we need to begin to understand how it works as it lives and not under the microscope of things we observe. *Might thermodynamic have a part we don't see that matters even more than we know today?* What we see when we do observe life in this fashion is that it works coherently using quantum electrodynamic theory. The biology of human bone regeneration detailed in EMF- 8 is proof of concept. The more shocking reality for me was in discovering how a syncytium of life uses quantum field theory to find order in chaos. The electromagnetic theory of light and matter showed me how electromagnetic energy animates and coordinates all living matrices found in biology but energy is not how it is done.

The electromagnetic spectrum starts from wavelengths of 10^{-14} m at one extreme to 10^8 m at the other, spanning a range of 10^{22} , in terms of frequency doublings, $10^{22} \approx 273$, or 73 octaves.

Visible light from our sun only makes up one octave of that spectrum. The thought I held in my mind was, with the increasing level of 'man-made' electromagnetic pollution in our modern environment, what was the biologic effect on all life? With increasing mobile phone and wireless networks use, one might well ask whether the "organism's resonant music" in grave danger of being drowned out altogether by this background noise?

We know from musical resonance studies there is a specificity for sound. Today, musicians have begun a trend to tune their instruments back to the pitches that were popular in previous centuries. Sometime in the 1930s, the music industry then agreed upon an international standard. So instead of middle note resonating at 440, it would be "tuned down" to 432. We found out that the sound of a 432 note resonates with your heartbeat and the higher 440 is more of a brain/cranial sound. The interesting observation people have made when they have burned two CD's using the two resonances is that the brain's perception of the older acoustic resonance had a more profound effect on the listeners. This showed us there is an inherent resonance for optimal acoustics. **It turns out the same is true for electromagnetic resonance for biology as well. Re-read the quote above. This is how physics works too.**

THIS IS THE LIGHT YOU NEED



The electromagnetic spectrum is huge and capable of providing great specificity and selectivity to organize biochemical reactions. Moreover, it is the formation of intermolecular complexes that organizes the cell is due to the universal electromagnetic attractive forces between molecules. The old idea of "lock and key" receptor to enzyme binding is now blown out of the water when you realize life is organized by quantum electrodynamic field theory by resonance.

I can not say this loud enough, modern biochemistry still does not believe this even though it has been experimentally shown to be true many times over. Remember, Becker showed in the

1960's this is how bone works already in all vertebrates, so he proved them wrong 50 years ago, but they still do not recognize it. You must now. **Trying to understand life with a biochemical lens subtracted from biophysical levers of control is scientism.**

Today, in my day job in neurosurgery, the evidence for quantum field theory is over the top. Applications of supersensitive SQUID magnetometers to monitor electrical activities of the brain since the 1990's have revealed an astonishing repertoire of rapid coherent changes completed in milliseconds, which sweep over large areas of the brain. These findings, and the observations on synchronous firing patterns, in the 40 to 60 Hz frequencies, in widely separated areas of the brain recorded by conventional electroencephalogram (EEG) techniques, have compelled neurobiologists and neuroscientist to consider mechanisms that could give rise to long-range coherence in us. I find it more than ironic that many of the "paleo scientists", clinicians, and neurobiologists remain so in the dark about these things and come up theories that are really "unrewarding" for many.

I told you earlier in the series that biochemists believe that "action at a distance" is what they call, pseudoscience. Ironically, that is precisely what quantum field theory says happens in all the time in biology. So, my contention since 2008, is that all that they currently believe now has to be considered pseudoscience. Since the electromagnetic spectrum has so many octaves at her disposal, even a small fraction of the 73 octaves would far outperform any specificity in shapes of molecules in a standard state kinetic flux in a cell. It is already well known that molecules with the same intrinsic frequency of vibration not only resonate over long distances, and hence undergo coherent excitations in many biological applications, like sight, smell, muscle activation and bone regeneration. It is no longer tenable to believe "classical biochemical" science for the in vivo actions in a living

system. Every one of your “leaders” still believes this meme because they were taught it by Ph.D.’s who run the schools of higher education. Dogma is a tough habit to break, even when EMF-8 shows you inescapable truths of how we really operate.

In quantum field theory here is a key point: standard quantum mechanical language says that an electron and proton position in a cell can be “delocalized” or “spread out” over long distances in space or time over the entity of the whole living system. This is hard to accept for classical biologist and chemists to accept, so they ignore it and reject it. Just because they do this in unison today, does not make them correct. In fact, it shows their ignorance of how biophysics really works to control biochemical substrates. It makes them dinosaurs in an old paradigm that enslaves patients of today’s modern world. Since I have established beyond a shadow of a doubt, that we are quantum beings in EMF 8, I think you need to begin to reframe how you view your life as well.

This is the realm of quantum biology. Since we are quantum beings, it means new rules need to be applied to what we believe. The era of quantum biochemistry is now upon us. This means that electrons and protons have a finite probability of being found anywhere within the system based on evolutionary design. Let us examine how Mother Nature solved the second law of thermodynamics using Einstein’s math.

The importance of biochemical reactions being able to recognize other chemicals by sensing their resonance cannot be overemphasized. This is precisely how quantum field mechanics is designed to work and precisely how classic science fails to work or explain what we observe. Hence, this is the reason biochemists believe action at a distance is “pseudoscience”. Cells in a non-quantized world of ATP production have to exist far from their equilibrium. This comes at a thermodynamic cost that Mitchell theory cannot explain even to this day. Let us look into that claim with some details for my critics.

Biochemistry Geeks: A serious line of evidence comes from a scrutiny of the thermodynamics of biological processes, especially enzyme reactions. Like the outstanding anomalies of the pure liquid, a full mechanistic explanation seemed to require more than the random hydrogen bonding of one-state water. Here is where the work of Dr. Philippi Wiggins is critical. In particular, the ability of some enzymes to hydrolyze ATP, peptides and polynucleotides and others to synthesize ATP and biopolymers, a pervading phenomenon in biochemistry, which had no detailed molecular mechanism. Mitchell theories just could not account for these reactions that we know happened in life. I really struggled with this until I realized how a coherent living system deals with this information problem. Peter Mitchell's concept of energy transduction which was proposed in the 1960s has survived to achieve the status of a textbook fact, but it does not constitute a quantum molecular mechanism found in any living matrix. I have heard many a "paleo biochemistry lecture" given by its leaders and they are parrots for Mitchell's thesis. That is not a good sign if you are following their solution for your biology when you are ill and trying to obtain Optimal. Here is why I believe you better re-examine your beliefs now:

The free energy change of a reaction indicates how far the reaction, as written, is from equilibrium and, therefore, whether or not the reaction will proceed spontaneously. For example, the free energy change of the reaction:

$\text{Mg/ATP} + \text{H}_2\text{O} = \text{ADP} + \text{Mg} + \text{P}_i$ is approximately -30 kJ/mol .

Here P_i means the mixture of $\text{H}_2\text{PO}_4^-/\text{HPO}_4^{2-}$ that exists at the prevailing pH. This is a rather high negative free energy change which means that the reaction, as written, will go spontaneously from left to right and that the reverse reaction from right to left has a free energy change of $+30 \text{ kJ/mol}$ and will not go spontaneously. The magnitude of the free energy

change shows that the reaction is far from equilibrium for some reason. As the reaction proceeds from left to right, 30 kJ/mol of energy is **dissipated as heat**. Is this somehow helpful in this case that we don't appreciate? The concept of energy transduction states that the negative free energy of a spontaneous reaction, such as hydrolysis of ATP, can be used to drive an uphill reaction, such as movement of cations from low to high concentrations, provided that the two reactions are coupled in a single enzyme active site. We need to take the case where the uphill reaction has a positive standard free energy change:

A=B with a $\Delta G = +10\text{Kj/mol}$

The spontaneous reaction has a larger negative standard free energy change

C=D with a $\Delta G = -30\text{Kj/mol}$

When the two reactions are coupled the overall reactions are:

A + C = B + D

and the free energy change is $\Delta G_o = +10 - 30 = -20 \text{ kJ/mol}$ i.e. when the reactions are coupled, the sum of the two standard free energy changes is negative, and the uphill reaction can proceed. The uphill reaction might be a movement of Na^+ or H^+ from a low concentration inside a cell to a higher concentration outside the cell, and the spontaneous reaction hydrolysis of ATP. *This is called energy transduction.* It is taken to mean that free energy stored in the bonds of ATP can be converted to other forms of energy and harnessed to do work. Is there another transduction pathway we are missing?

This concept was vigorously debated in the 1960's. Physical chemists pointed out that, however, and wherever ATP was hydrolyzed, the free energy of that hydrolysis was dissipated as heat (big point) and could not be diverted to or bestowed upon another unrelated reaction, however hungry that reaction

might be for kJ. True coupling of reactions requires that a reactant of the uphill reaction is a product of the spontaneous reaction so that it is so rapidly scavenged that the reaction can proceed. Biochemists, in their turn, pointed out that whenever the two reactions occurred together in the active site of the sodium pump, ATP was hydrolyzed and work for transport performed. **Without hydrolysis of ATP, no transport occurred.**

The fallacy in their argument was that they believed that each step in the overall process **must have a negative free energy change**. Here are biochemistry and paleo's inconvenient truth.

They both believe Mitchell theory, and this leads to collateral damage. What did they miss? As I showed in EMF 7.

in fact, the criterion that a reaction will proceed is simply that the free energy of the products is more negative than that of the reactants. There can be ups and downs on the way from reactant to products, but as long as all the steps considered contribute to the overall unitary process, all that matters is the beginning and the end, irrespective of how the system gets there. Water, having a dual structure that allows it to be physically coherent, was the key missing piece to Mitchell's ideas. When we split water we get OH^- and lots of protons. Might this reaction hold the clue? Dr. Phillip Wiggins, who I mentioned in the opening of EMF-7 provided the answers to Mitchell's errors over the last 15 years. This is where physics began to open the playbook for how life works on the quantum biologic "thermodynamic playground." Wiggins information provided me more information that two other scientists from the 1960's were also correct about their findings using Quantum electrodynamic theory.

Wiggins pointed out a key paper by one of the groups participating in the debate gave a very good clue as to the kind of "local environmental change" that phosphorylation of the enzyme caused. This told me the information was part of the equation. George et al. showed that the free energy of

hydrolysis of molecules like ATP was given by the difference between the free energies of hydration of products and reactants. They called this paper "Squiggle-H₂O. An inquiry into the importance of solvation effects in phosphate ester and anhydride reactions". At this time the terminal phosphate bond of ATP was called a high-energy bond and given the symbol ~P. The "Squiggle-H₂O" paper showed that there was nothing special about **squiggle P** but that the hydration free energies of all components of the reaction were of crucial importance. This immediately suggested a way out of the impasse reached between physical chemists and biochemists. It is too bad most of them do not read biophysical papers, to realize the solution is found in structured water. The key is buried in the story of the proton.

Phosphorylation of the active site of the pump protein somehow changed the hydrogen-bonded structure of water inside that cavity. Changes in water-water bonding must change all free energies of hydration of solutes in that cavity. Some ions might move out of water which was less able to hydrate them (eg. Na⁺, H⁺, Ca²⁺) and both the sign and the magnitude of the free energy of hydrolysis of ATP might also change so that synthesis became a spontaneous process. These changes in hydration free energies are necessary consequences of a change in local water-water bonding because the first step in the solution of a solute is making a hole in the water big enough to accommodate it. This involves breaking a considerable number of water/water bonds freeing up protons in the process. The free energy required to break bonds must change with the water structure. Water binding to the open face of the proteins in cells provides the superconduction proton and electron highways that allow the Quantum dance of life to happen.

Non Geeks Unite: When water superconduction is broken in you, due to modern life, you must rely on rapid recycling of ATP from the pathways I mentioned in EMF-4. This means that

glycolysis and the PPP will be the metabolism the cell will have to rely on when there is a proton problem. When you live in a world only powered by ATP, your sleep is the first thing to go south. Initially, it becomes poor before it totally fails, and you get diagnosed with sleep apnea. As it goes on more chronically without proper treatment, you eventually die from right-sided congestive heart disease and pulmonary hypertension. Yes, in total sleep failure you get a specific kind of heart failure preceded by a fatal heart arrhythmia. This rhythm modern cardiology knows about but still has not made the link to it I have because of the loss of water proton conduction.

When your sleep fails it turns genes off that allows you to remain in a "zero entropy state" of health. When quantum timing is off, life dies because it has to rely on ATP regeneration and recycling systems (EMF-4) which are only designed to support non-complex life like Archaea and Eubacteria.....not a matrix with a complex nervous system in its head.

Cells that use water super conduction live in this perfect equilibrium all the time. A zero entropy state defines what a perfect equilibrium is, in case you are wondering. Thermal energies, particularly at cellular equilibrium, possess no information potential at all to help biochemical reactants meet and react; whereas an excitation or resonance of a specific frequency at a certain temperature where no other excitation of the same energy exists in a system far from equilibrium (a cell) not only has just the requisite information to do the work, but the inherent power to do it as well. This power is built into its coherent cytostructural design and not into its mechanistic reactions found in a modern biochemistry textbook. The living organisms cytostructure provides the motive force of attraction using the power of semiconduction between appropriate bio-reactive moieties. In turn, this enables efficient energy transfers to

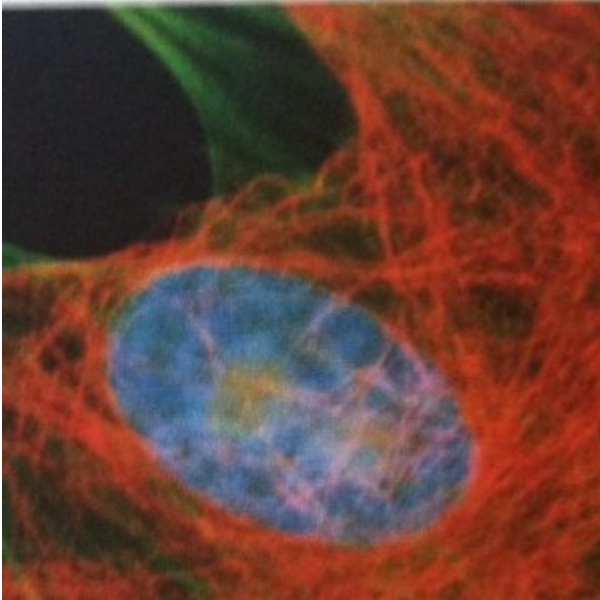
take place simultaneously without time ever being a major player in those reactions. In essence, **time can stand still in a zero entropy system.** When this system gets any disorder (entropy) placed into it, we call this inflammation, randomness or chaos increase and the result is a process called aging. It does appear that order comes with chaos. This chaos is accounted for in a cell by its telomere length becoming shorter. The shorter the telomere the more molecular chaos is present and hence the older the living organism is. This links leptin resistance to aging and shorter telomere lengths. **When life is constructed in a quantum fashion, 'information' is not something apart from the energy it is, in fact, accounted for in functional design and organization.**

Some good news is coming for you all here because it appears some biochemists are catching on to quantum field theory for biology too. Some biochemists studying enzyme kinetics are coming around to the idea that coherent excitations may have more relevance for enzyme action than the conventional 'lock and key' principle that they currently believe. The reason for this is simple. It is because the experimental data is becoming overwhelming that life is "quantized" in all respects when we look for it. Veljko Veljkovic, first proposed that molecular interactions are electrical in nature, and take place over distances that are large compared with the size of molecules. Then his graduate student Irena Cosic later introduced the idea of dynamic electromagnetic field interactions. This implies that molecules recognize their particular targets and vice versa by electromagnetic resonance as their sole signal. This means the resonance is the key to understanding how biochemical reactions work in the electromagnetic field they exist in. This is precisely how the Schumann resonance connects to the perineural interfascial water in bone, you first learned about in EMF-8.

See in human bone, I have given you definitive proof that action does happen at a distance, and in the case of life, a

very great distance. This should be a big eye opener for biochemistry, you, and for the "paleo leaders". Somehow I doubt the later will put Windex on their glass eyes. The Schumann resonance is a very great distance from the interfacial water in a Schwann cell but it is clear from how quantum bone works that are precisely how things do work in us no matter what modern biologist tell you in a book, lecture, or research paper. So what does the Schumann EMF do for us? The Schumann oscillations make this interfascial water completely coherent in the collagen carbon-based nanotubes in all cells of our body. What does this mean? This means all the energy to power life is present in the design of our cells because our cells are all comprised of component parts that act as P and N semiconductors. The connecting lattice is water in our cells. This is why 71{a7b724a0454d92c70890dedf5ec22a026af4df067c7b55aa6009b4d34d5da3c6} of cells are water by weight.

Collagen is piezoelectric and it is the most abundant protein in our body for a reason. It acts as our P semiconductor, and it is found in every human cell of our body. It forms our carbon nanotubes in our cells cytoarchitecture. New scanning electron micrographs and X-ray diffraction experiments show this is 100{a7b724a0454d92c70890dedf5ec22a026af4df067c7b55aa6009b4d34d5da3c6} true.



The orange is carbon nanotubes in a living cell.

In EMF-8, I showed you in bone, when a force is applied to type 1 bone collagen, a small DC electric potential is generated. The collagen conducts current mainly by negative charges from the photoelectric effect. Mineral crystals of the bone (Calcium hydroxyapatite) close to the collagen conduct current by positive charges. At a junction of these two types of semiconductors, current flows easily in one direction but not in the other direction. This is the copper doping mechanism in play. The polarity of current flow is controlled by the magnetic field.

The key, however, is understanding what water does in all this quantum field. This is precisely where the quantum magic occurs in life. Water is the liquid crystalline matrix that hydrates all proteins. Collagen protein is the P semiconductor and water is the N semiconductor in most of life's systems. In other words, the molecules (proteins and nucleic acids RNA /DNA) send out specific frequencies of electromagnetic waves which not only enable them to 'see' and 'hear' each other, as both photon (light) and phonon (sound) modes, exist for electromagnetic waves. This what molecular resonance is. Their work has proved beyond a shadow of a doubt this is how biochemistry works in vivo. This is another

reason why what Dr. Montagnier has found in water memory experiments may make some scientific sense now. Paleo believes this is woo-woo and yet the data is overwhelming and found in how bone really works? So who is right? Paleo or evolutionary design of semiconduction? We need to try to explain complexity in science, instead of branding things pseudoscience. It limits our understanding.

The idea of molecules communicating and exchanging energy by electromagnetic resonance fits in perfectly with accumulating evidence that cells and organisms are liquid crystallines in nature because of how water is used. Electrodynamics of liquid crystals is a well-established and active field of research in physics at least since the 1980's. Dr. Wiggins has been publishing this information since the 80's. I guess "some" were busy hunting, gathering and lovin' while looking for "hominid foot bones" and looking for the grain "Yeti back" than to really discover how evolution really works. They make fun of things when their beliefs are keeping you from reaching your Optimal self. The story of evolution is built into this story. This real story of evolution is not their story, so they just ignore it, at your peril as they sell books, training regimes, and cross fit memberships.

All molecules in cells are filled with water, are aligned and working coherently together in our system. This is why it is called a coherent system of *energy/information* transfer. The energy and information transfer occurs via water networks in tissue which connect to every cell. When you open a modern day biochemistry book they ignore the fact that over 70% of cell content is water, and they go one about their business as if the water is just an innocent bystander to life's chemistry. Nothing is further from the truth.

When you marry the idea of how EMF resonance and biochemistry dances together, soon thereafter, biologic semiconduction and energy generation and transfer in life makes a lot of

sense. Biochemical mysteries become explainable when you realize semi-conduction happens in a living cell and not one in a research lab that has had its intracellular water removed in prep of the experiment. It shows you that Mitchell's work on chemiosmosis, the cell membrane, and Mg/ATPase are just a secondary system to energy efficiency to be used if life lost photons from the sun or electrons from the Earth for any reason.

In fact, I believe the energy efficiency of our system's design, is the basis for the zeta potential of life when it must live disconnected from the photoelectric effect. Plants are constantly plugged in and have no need for leptin to create energy balance monitoring systems, so they have no need for the leptin receptor or for fat cells. When animals evolved out of seawater which is highly conductive and always connected to the Earth, and they could move on land in a disconnected fashion and also avoid the sun for long times. I believe this is what drove the evolution of the leptin receptor and of fat cells in the animal kingdom. I believe this is where chemiosmosis and Mg/ATPase became important as an add-on system for energy, allowing life to disconnect from both environmental sources of energy, and yet still evolve. Mg works in unison in this system because it is hydrophilic and works in concert with water. It is not as important as water is, but it becomes critical when the living matrix becomes dehydrated for any reason at all and must rely on ATP from glycolysis and the PPP to power life.

Animals need these more complex and redundant systems, to move through their environment while often missing the free photon or electron flow from the ground or the sun. With further evolutionary development, more redundant systems were also evolved such as the Vitamin K₂ and CoEnZQ10 Enzyme systems to protect our serum from a loss of free photons or electrons from our living matrix. This is where the zeta potential came is as our system of living allowed us to do more complex

things, like living outside our evolutionary design because we had a massive brain to create our own environment.

I covered this in the Mitochondrial Rx webinar in January 2013 in some detail. The real human miracle of our minds is not that we can see the world as it is.....but that we can see it as it is not, and then change it. Many times we will subjugate the best interests of our survival to suit our emotional needs or desires. The real paradox of humanity is that our reasons for the things we do are often weak, but our sentiments to do them remain quite strong. This is the paleo paradox in a nutshell. What they think is ancestral, just is not. It is a belief based upon a false theory that is 10,000 years old. The mitochondriac should be focused on a story that spans 3.8 billion years back.

The Second Law of Thermodynamic Paradox

Once you understand that biology uses semiconduction as its main energy source you must begin to question, why it does this? The answer becomes quite simple with reflection. It is looking to circumvent and maximize the second law of thermodynamics set forth by Lord Kelvin by using quantum field theory. The second law of thermodynamics states that the entropy of an isolated system never decreases because isolated systems spontaneously evolve towards thermodynamic equilibrium—the state of maximum entropy. Entropy is a fancy name in physics for randomness. Our environment is total chaos to a cell. Chaos might be the key building block in life. Life's goal makes sense of total chaos to live and to organize. So how does life solve this riddle? Mother Nature used her design to simply build a zero entropy system where form always meets function. When you use smart design as part of your original plan you sidestep this complicated issue that has perplexed scientists for ages.

How did life do it? In semiconduction matrix, it is possible to create a system that uses coherent energy and information that can be **stored within the system of biology** that can give life energy at any time it needed, for any reaction at any time and not is subject to space or time alterations. The system is circular because of one part of the cycle is a positive feedback loop and the other side is a negative feedback loop that keeps entropy under an organized control as long as the sun pumps a chronic source of energy/info into the system. Information and energy are part of the equation, but they show no symmetry in a cell because of mitochondrial function. That is how life does it. In a system built by semiconduction, there is always energy available within the system

100{a7b724a0454d92c70890dedf5ec22a026af4df067c7b55aa6009b4d34d5da3c6} of the time, because it is stored coherently and organized, and ready for use 100{a7b724a0454d92c70890dedf5ec22a026af4df067c7b55aa6009b4d34d5da3c6} of the time because of it complete freedom of use, overall **space-time** domains. How information is handled is a black box in classical thermodynamics. When energy is constantly available, timing does not matter, but information does. When energy declines for any reason, time begins to matter in a big way, because information transfers drop at a faster rate, and aging occurs (heteroplasmy). Time can be slowed down if you understand how quantum electrodynamic theory works even for you in your matrix. I showed this at my Paleo Fx talks last year in 2011. People just could not wrap their heads around it a year ago. Now here is the foundational science to show you how it was done.

This is why the trees are among the oldest living things on our planet.

That is the basis of the autonomy of organisms built into them by evolutionary design. It is the ultimate situation where form meets function. It is how it creates complete order from

total disorder in the universe. It is how life gained zero entropy to skate around the second law of thermodynamics. Life made complete sense from randomness by using massive influxes of energy to get it. This is how "C²" was used by life. It reverses Einstein's math to create a zero entropy situation in cells.

Moreover, it means that energy and information can be recycled quickly in our primordial system blueprint, contrary to what people normally believe in biochemistry circles. Is the same true about information? Might this be why diet has never mattered to wild animals, until we began to do things to alter water coherence by altering our environment? This is why wild animals live in energy balance and do not get fat and we do when we interrupt the connection to information transfer in our environment. Culture and beliefs began our slide and modern technology has steepened our slope of decline today. In essence, it shows you how to avoid the situation I described in detail in EMF 4. When you lose energy coherence you are subjugated to using ATP to drive biologic reactions to live, and not use water super conduction in protons. When you do this you are increasing your dependence upon space time and you age faster. This is why circadian biology is so tied to life. Every single gene has a promotor call a circadian gene regulator in front of it. When we live out of coherence, we trade time for life. In a 100{a7b724a0454d92c70890dedf5ec22a026af4df067c7b55aa6009b4d34d5da3c6} coherent matrix, aging can be slowed dramatically, because energy never dissipates or is thermalized because it is built in a zero entropy system by evolutionary design.

Critical point: Water coherence unlocks us from the quantum time quandary, I mentioned in EMF-6.

When we lose water super conduction in nanotubes time speeds up for life, and it first ages quickly and then it dies. This is the mechanism of how all neolithic diseases today are

created. When water is part of the semi conduction and coherent system of energy transfer, there is little or no free diffusion in such a system. It has a zero entropy. A biophysicist named Herbert Fröhlich had pointed out in the 1960's, that energy transfer by using water's molecular resonance or coherent excitations, has to occur through large distances, activating entire populations of similar molecules that are in different parts of the cell or different parts of the body, so long-range coordinating of function can happen instantaneously. Proton jump-conduction occurs along the long fibers of collagen and the water bound to it and belongs to a form of semi-conduction in the condensed matter called a liquid crystal. This allows for instantaneous action within the living organism. This proton conduction is much faster than conduction of electrical signals by the nerves in the peripheral nervous system. The collagen fibril cytoarchitecture of the entire body has a much better intercommunication system than can be provided by the peripheral nervous system alone. That may help explain the observations of why lower animals, like a hydra, that do not have a nervous system are nonetheless sensitive and responsive in nature.

Fröhlich ideas were considered radical in the 1960's by physics because instrumentation was so poor it could not prove his theories. Today, most of his theories have been shown to be true because now our technology to test them is far superior. In QED, there is something called the Bose-Einstein Condensate. Fröhlich believed that in an living biological systems are "open" and very far from equilibrium and have considerable amounts of energy available, built in their design, that could cause non-linear changes in molecules and larger biological subsystems. He was the first biophysicist to believe that biology work at a distance because since it too was far from equilibrium and he felt it might work like the Bose Einstein condensate principles in quantum electrodynamic theory (QED). He proposed long range coherent

action in living tissues first in, 1967, at the L'institute de la Vie. He was way ahead of his time in applying Einstein's math to biology. His idea was that if energy was constantly supplied by an external source (sun and ground) it would excite polar molecules by increasing their oscillations to supply the surrounding cytostructure. I have learned much of what I know about biology and QED from his work. He was the father of dielectric chemistry in semiconduction. It was in his work I discovered why trans-fats, fluoride, and plant based omega 6 fats, caused humans problems by altering cellular communication electrically in their cell membranes by dissipating the energy stored in our semiconductive tissues. When these things are incorporated into our cell membranes it causes avalanche collapse of the semi conduction current in collagen and water. Our current for semiconduction can come from the duality properties of light described in Einstein's photoelectric effect. In a quantum electrodynamic field, theory light has a photon, electron, and phonon (sound) effect because it can acts as a wave or a particle at times when it is in a coherent semiconductive matrix.

When something can occur simultaneously and instantaneously in a system by its semiconductive design, timing essentially becomes irrelevant as long as the external sources of energy and information are maintained. When water semiconduction is lost, timing becomes quite relevant. This is the situation humans now find themselves over the last 1000 years. When the external sources are diminished for any reason, this contributes to cause the process we call aging in all life forms. The life forms that match their evolutionary design best, will live the longest. Life that makes sense out of the chaos of the environment are rewarded via natural selection. Those that break the conditions of existence are taken out. Today, we are being extinguished because of what we believe or fail to realize is true. This is precisely why trees are among the oldest living things on the planet even today. It also explains why sharks live so long too. This is how water

acts in collagen nanotubes and in the perineural conduction system you learned in EMF-8, when it is resonating in its evolutionary frequency of the magnetic field. Today, we are not living with our evolutionary conditions of existence, and there in, lies where neolithic disease sprang from in the 20th century. It is no mystery when you understand how Mother Nature is designed to work.

You have heard me say in the EMF series that life can get by anywhere on this planet by design regardless of the diet because it comes built hardwired for fitness by design. Many people have struggled with this concept simply because they do not understand that a quantum life form has massive energy built into its framework to sustain itself from environmental pressures. Today, those pressures are so great, that diet matters quite a bit, because we are losing massive amounts of electrons from the photoelectric inefficiency to the environment constantly. This is really a counterintuitive point to most, that I made in EMF-2, when you believe life is based in static physics and biochemistry. This is why several bloggers have questioned my sanity in 2012. The irony is, they are the ones practicing "true pseudoscience" when you examine the data. I am not here to make fun of them, I want them to get it right for you. Most of them are bright folks who mean well. But your health is suffering while you do not realize it. This is why and where most of you find yourselves today. EMF 8 should have convinced you that we are quantum beings based upon all the data I gave you. It is no longer arguable. Now we need to move onto the implications we learned in EMF-8.

How is life organized into a zero entropy system to make it all work?

As contrary as this sounds, organisms of life are never simply at the mercy of their environments on account of the coherent

energy stored. More to the point, we don't have to eat constantly to gain electrons to power our superconductors when the electromagnetic field is normal. Today, however, we do because our electromagnetic field is altered. There in lies, the difference, for us today and why what I suggest to people seems so counterintuitive. In our "normal field", we could use other sources of free electrons and photons to power life, which left us plenty of time for other useful, pleasurable activities to allow us to evolve further.

What are those other free sources of energy that is bound to our collagen nanotube lattice filled with semiconducting water? In EMF -7, I opened that door for you, but many of you failed to realize it. The photoelectric effect and grounding (sun and ground) are the two major ways the system is fed and the semiconductors contain this stored energy. When the water is made quantum coherent, or structured, by interacting

100{a7b724a0454d92c70890dedf5ec22a026af4df067c7b55aa6009b4d34d5da3c6} of the time with the perfect magnetic field life evolved with, it becomes possible. Today, this is no longer possible but we can use it to power up a lot to offset these losses to our environment. This is precisely how I reversed my problems.

Optimal requires the Schumann resonance to be operational and accurate globally. This point was brought home in EMF- 8 when I discussed the perineural water current and its origin. When the magnetic field is disrupted for any reason from its evolutionary oscillation pattern, we lose quantum coherence and we must rely on ATP to power life. It is unable to do it well on a space time continuum and as such, quantum time is lost. As quantum timing is lost, energy drains from the superconductors of cells and life begins a quick de-evolution on its way to a fast death because of the second law of thermodynamics is now in play for life, and it can no longer remain at equilibrium easily. C^2 is the key to timing as I

have pounded the table for in EMF-2 blog. What is it about light that makes the second law operate differently for cells?

This is a very hard thing for a biochemist to take, because they do not understand what energy/info coherence means. **It is a physics term and not a biologic one.** But we have evidence from bone that this is the energy that our life force uses. They must change and if they do not, you must change to understand how to regain your health now. Remember that stored energy in the cytoskeleton of all life is found to be coherent energy normally as it has evolved. When its field has been altered to a new state the rules that dictate coherence of energy are lost and must be reestablished. The organism is a highly coherent domain possessing a full range of coherence times and coherence volumes of energy storage. In the ideal, it can be regarded as a quantum superposition of coherent space-time activities, each itself coherent, and coupled to the rest. I understand this is tough to get for a non geek, but most physicist will have zero issues understanding that life can make time stand still when massive energy is present and stored in its evolutionary design of its cyto-skeleton. This is where the carbon nanotubes and water come in. We will explore those in detail soon enough.

This is how life “optimizes” the second law of thermodynamics. **It builds cells to be a zero entropy nano-machine that constantly makes energy.** Its architectural plan is simple. It uses a fractal pattern of self repeating units, while it simultaneously couples all energy consuming activities to the energy generating reactions thusly completely eliminating waste. The system is built for complete energy efficiency using the coupling of reactions that make and use energy/info. It uses the power of the sun and Earth’s magnetic field to make the quantum magic of life occur. When things are off, timing matters and masses increase for all things in that field. This is why you get fatter and sicker today even when you do things doctors tell

you you should to reverse it. They no longer work because the rules of life have shifted.

Biochemistry Geeks: Over the past 40 years, enzyme chemist Rufus Lumry and his colleagues at the University of Minnesota, Minneapolis, USA, have shown convincingly how the flexible enzyme molecule balances out entropy with enthalpy to conserve free energy. The organism can be regarded, in effect, as a closed, self-sufficient energetic domain of cyclic non-dissipative processes coupled to irreversible dissipative processes. In the formalism of conventional thermodynamics, the life cycle, or more precisely, the living system in dynamic equilibrium, consists of all cyclic processes for which the net entropy change is zero, coupled to dissipative processes necessary to keep it going, for which the net entropy change is greater than zero. That means the system maintains its organization (or negative-entropy state) while it is metabolizing and transforming energy. Essentially, using this evolutionary design, the cell frees itself from the immediate constraints of thermodynamics. This is how life makes $1 + 1 = 4$. It uses a fractal design and builds the blueprint to harness the energy constantly to release it when it is needed. When you realize the power of coherence for evolutionary design, you begin to understand why no part of the living matrix needs to be pushed or pulled into action or subject to normal timing, or subject to mechanical regulation and control. When water conduction is working hormonal regulation is perfect and balanced. When energy is plentiful in a coherent system, a coordinated action of all the parts depends upon the rapid intercommunication throughout the system. This is how a needle in your foot registers an aversive sensation and turns it into an avoidance maneuver in less than a second.

All living things are a syncytium of 'excitable media'. Moreover, excitable cells and tissues are poised to respond specifically and disproportionately to weak metabolic or

environmental signals like a grounding current of (1 billionth of an ampere), because of large amounts of energy stored everywhere in the semiconductors of your collagen cytostructure. Is information stored in the same way? By design, this automatically amplifies weak signals, often into macroscopic biologic actions, as we saw in bone in the EMF-8 blog. This is an example of how an electron can be used as a particle in our body. We saw how the photoelectric effect in bone was modified by a copper doping mechanism, to generate an electrical current that would lead to compression or tension on a bone surface to dictate a signal for resorption or apposition of bone. This is an example of how the wave form of light is used in our body. The essence of the photoelectric effect is that it can at times allow us to use electrons or photons are particles or waves, only when the body is in coherence with the Schumann resonace.

Why is this situation so difficult for modern biologist and chemists to accept? Their science is built on the assumption of cause and effect, called the mechanistic theory of action.

Semiconduction and the coherence of energy transfer obliterate these constraints in the living matrix of life. When you understand that we are quantum beings, it makes you take note of the radically anti-mechanistic nature of all living organisms. If you want to be astounded, go look at some life forms or embryo's under a polarizing microscope and see what a living moving liquid crystalline semiconductor looks like.

Modern biochemical experiments drain cells of their coherent water to study mechanistic pathways outside of how life works.

When you begin to realize this it makes sense why they **can't explain** things we observe today. Under a polarizing microscope, living cells refracts all light as a prism would as it lives and moves. Why? Water is its liquid semiconducting crystal in every cell. I have done this many times over the last 7 years to all animals, including human cells. It makes you realize all you believed your entire life, has to go up in smoke. Being wrong is hard for

scientists and physicians to accept. This is why I showed you Kathy Schultz TED talk on being wrong in this series. You might want to watch it again. Counterintuitive is the way of QED and biology.

Summary

Those who connect things well put great effort into themselves to innovate ideas. One of the best connections we can make in reaching out is to meet the needs of others. Connection is a “coherent” communication on all levels. There should be multiple degrees of freedom in our thoughts. We should never allow our previous biases or beliefs subjugate our ability to think or a new thought as a possibility. Coherent connections in life and science are similar to how Intel engineers use electrons to flow over a mass of silicon. A small increase of current leads to a massive impact in possible abilities. Life is like a semiconductor: a locking mechanism who connects people coherently so that they travel together to their destination each carrying their own load yet supporting the other to reach it with a massive impact. When you connect with you, it allows you to connect with the world to make an impression. It is where your sum, surpasses your parts, in outcome and impact. When you have time watch this video.

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- EMF 8: Quantum Bone

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