Energy and Epigenetics 10: The Quantum Puzzle

Readers Summary

1. What is a quantum cell?
2. What is the biologic crossword puzzle?
3. Why is a guiding theory important?
4. How are energy and entropy linked?
5. How can poor sleep with ketosis show a macroscopic quantum effect?

“It is often less difficult for a man of original thought to discover new truth than to discover why other people do not understand and do not follow him.” – Herman von Helmholz, MD and physicist

Most of the science that gets done today gets done within a rigid set of rules applied, where you know exactly who your peers are, and things get evaluated according to a very strict set of standards. That works, when you’re not trying to change the structure. It works really well when it fits the paradigm of the day, because it helps build the skyscraper, called dogma, with incremental evidence-based science. But when you try to change the structure or paradigm of science, that system doesn’t work very well. When you try to do something that doesn’t fit into a discipline or a standard theory, you usually make some enemies. Gilbert Ling is an example of somebody who didn’t follow the rules and pissed a lot of people off. In fact, he pissed off so many people that they alienated his work, made sure he had no funding to continue on, and then allowed somebody to steal his work and gave that person the Nobel Prize in 2003. Today, we are going to unfold that story, because fundamentally this is why millions are dying from neolithic diseases today. All energy on this planet comes from a star. The matter that makes up Earth is from a exploded supernova. The energy that bathes this planet and forms all of our sources of energy today come from electromagnetic radiation of a star, called sunlight. That includes food, too.

So to make life, a cell would need to capture that energy to animate life. So how does life catch a photon? I told you in Energy and Epigenetics 6 the key is found in how a cell stores energy to use it when it needs it. I got that idea long before I was physician when I read a physics book called “What is Life”, by Erwin Schrodinger. In it, he made a bold pronouncement that biology, even today, has a huge problem with. He said life was organized around negative entropy and not energy. Schrödinger’s famous statement about life said, “It is by avoiding the rapid decay into the inert state of ‘equilibrium’ that an organism appears so enigmatic. ***What an organism feeds upon is negative entropy***.” When I first read it, I was young and very interested in science, but I did not understand what he really meant. But there was a footnote in the book that explained it better. In that footnote, he said that by using the term “negative entropy,” he meant the cell somehow harnesses free energy. He clearly did not know how it happened, but he knew

it did happen.

I had also read Albert Szent-Györgi's famous speech about semiconduction to the Budapest Academy in 1941 by that time, and I immediately linked those two concepts. Today it is now well known and accepted that the ultimate source of all our energy and negative entropy is the electromagnetic radiation of the sun. When a photon interacts with a material particle on our globe, it lifts one electron from an electron pair to a higher level. This is how the photoelectric effect works and why Einstein got a Noble Prize for discovering it. How biology uses this effect in us is just beginning to be understood. That affect is now well known in plant chloroplast for photosynthesis.

It is my contention that no big changes in biology or medicine will be possible until we begin to understand how the human cell catches electrons, photons and protons like chloroplasts do. This is where the grand theory of how a cell works must be re-written by nature's laws and not the theories founded by the people who run biology. This is when quantum cell theory replaces modern cell theory. How we energize and animate life is where this should begin.

How Do I See the Quantum Cell?

When a photon interacts with a material particle on our globe, it lifts one electron from an electron pair to a higher level. This excited state as a rule has but a short lifetime and the electron drops back within 10–7 to 10–8 seconds to the ground state giving off its excess energy in one way or another. Life has learned to catch the photon or electron in its excited state, and then act to uncouple it from its partner and let it drop back to the ground state, through its biological semiconductors utilizing its excess energy for life processes. In this sense, you can begin to see how living organism are organized. This makes sure that all forms of life are never at the mercy of their environments, on account of the coherent energy stored within them. This explains why animals don't have to eat constantly, leaving plenty of time for many other useful activities of daily living. It also explains why fat likely evolved. It allowed animals to live disconnected from the Earth and sun for period of times. This benefit was not afforded to trees and plants who are 100{a7b724a0454d92c70890dedf5ec22a026af4df067c7b55aa6009b4d34d5da3c6} connected to the Earth by their roots and the sun with their leaves and canopies. Fat mass allows animals to return entropy back to the environment while providing energy when food is not present. When life is organized to store energy, no part of the system needs to be pushed or pulled into action, nor is it subject to "mechanical regulation" and control. Instead, it allows for coordinated action of all the parts. It is subject to timing, and it depends on **rapid intercommunication** throughout the system. The cell can thereby be thought of as a system of 'excitable media,' tissues, or organs called excitable cells poised to respond specifically and disproportionately to weak low electromagnetic signals. Those excitable media are called semiconductors. Electromagnetic signals are the strongest forces that bind the smallest particles in nature. **Because large amounts of energy are stored everywhere in cells and tissues, they automatically amplify these weak**

electromagnetic signals to often cause macroscopic actions in other atoms and molecules. This is the simplified version to give you the essence of what I wrote in Energy and Epigenetics 6. So lets get to the details of how this occurs in a cell.

The Biologic Puzzle

I want you to consider the science of biology today is like a New York Times crossword puzzle. Solving the biology of Nature is daunting because of the shear volume the subject encompasses. When one is faced with such a monumental task, the smart move is to divide and conquer the labor in parcels. This is what happened in the 20th century in biology. When they began this effort, the intentions were clearly good to solve the puzzle but it has lead us to a fragmentation of the core physiology that is biology's backbone. When biologist were faced with enigma's or paradoxes in the cell physico-chemistry puzzle they began to use concepts instead of words to solve this "crossword puzzle" because they just did not have the right words to fit the solution at the time. The reason for this was understandable, because these concepts they used were being discovered at the same time they were trying unravel Nature's biologic crossword puzzle. So what has transpired over the last 50 years in my opinion? By the time quantum physics came up with the correct words for the puzzle, biologist has already wrote their words in permanent ink into Nature's crossword puzzle. This is why we remain impotent in solving today's chronic neolithic diseases. Today, we refuse to use "white out", even when disease we can not explain are exploding all around us. This must change.

A Guiding Theory

In a cross word puzzle there is only one possible word to fill a blank to make the whole work. This analogy means that when we do not know something initially, we need first to develop a correct guiding theory. For biology in the 1940's and 50's, quantum physics was in its infancy and not ready enough for biologists to use. For them, the ideas of Schrodinger, were like an American at 80 years old, embarking on learning to speak and read Chinese. A tough task, indeed. A correct guiding theory is a must, before we embark on spending money on research. Why? **What good is your literature if your target is wrong?** All it does it lead down a path that will give you no answers and make you more confused than you were when you began. This is precisely where we are today. Many of my critics ask me for cites constantly and they just do not understanding citing a flawed literature is a useless task. They do not understand the essence of what is in the beginning of this post. Within the literature are answers to a correct guiding theory, but they are not in biology. They are in physics and physiology. The reason they have been buried by biology is because "big awards" were given for the wrong words in the biologic puzzle. 50 years of time have elapsed, and too many students taught via textbooks that have been written on these theories, who have believed these puzzle words for too long. Ironically, none of biology's made up words they have created have helped solve our current healthcare dilemma as a species. If you keep studying something over and over and get the same data that does nothing to reverse human illness, then you should rethink your

guiding theory, in my opinion. This is not being done by biology or medicine today. These two professions are intertwined because they rely on one another's output to drive thinking and action in both fields. They are coupled just as night is to day. The "new guiding theory" evolution will not come from them. It will come from an outlier in another science or it will come from people like you, who realize the early mistake and begin to innovate a new grand theory. I decided ten years ago to use quantum theory to be the basis of my guiding theory of how a cell really works. I did so because the scientists in the area of physics have used experiments to validate their speculation. All science begins with observation that causes us to guess. From that guess, we do experiments to validate the guess. If the data does not support the guess, your theory is wrong. It is that simple. But biology does not use that model. The real reason I have been intrigued by QED for my entire life, is because they have always had their work proven to be true experimentally and Nature has confirmed their experiments for the last 120 years without exception. No branch of science can boast a better success rate than that quantum mechanics.

What is the Guiding Theory? Meet the Quantum Cell

So what is the foundation of this new guiding principle I have found for Nature's puzzle? Quantum mechanics is the short answer. The reason is simple. One of its fundamental ideas is that at all times all probabilities and possibilities might occur. This means they don't guess words that fit the biologic puzzle of life. They wait until the die is cast, and the probabilities diminish, and the choice becomes clear. To me this makes a lot more sense than to guess when you do not know for sure. Quantum mechanics also assumes the world is inherently disordered to begin with it. I think anyone who has lived a while would agree with that. What quantum mechanics says, is that as time goes on, this disorder gets worse with time, and not better. It also says the only way to overcome this disorder is to add energy into the system, or make the system better ordered to over come the disorder. Disorder has a funny name in QED. Disorder is called entropy. QED says we only see order in parts of the universe where extra energy or organization is added to the system. This is why we can see a star's sunlight in photons. A lot of energy in nuclear fusion is spent in order for photons to be made so our eye can sense it and our brain perceive it. These photons are what life organizes around, and they are part of the electromagnetic force in our universe. A quantum cell takes the disorder present on Earth, and it makes sense of it.

The Quantum Leap Biology Must Make Soon to Get You Well

There is this funny peculiar thing about Earth though. It has a magnetic field that protects it surface from most of the electromagnetic radiation and force from the sun. This implies too much electromagnetic force is not good for life. This insight has not been made by many. Earth also has a magnetic core made up of iron and a surface that has water. These unusual set of circumstances are the ground rules that Mother Nature must deal with to make

order from the chaos here on Earth. When you really think deeply about what all these factors do in unison, you begin to see the recipe for life differently. You begin to see why life organizes around a cell that is loaded with liquid crystalline semiconductors at its core. They are made of water. Matter, like proteins are made of a carbon back bone. Carbon does not have a high affinity for water naturally. So this physical property of carbon and water interaction could be used to Mother Nature's advantage when you consider what impacts this has on energy distribution on Earth. When water is confined to tight spaces, like you would see in a cell, it restricts the distribution of energies inherent in the water molecules molecular structure. This is important, because by allowing for this naturally, the water molecules end up with a lower average energy than if they were in regular bulk water from your swimming pool. This implies, just restricting water to a "tight room", it becomes energetically favorable for the water to enter small collagen fibrils. It turns out the collagen molecules in us become self organized into a triple helix when it is surrounded by water. This water around collagen, however, then does something unusal. Water molecules separate from one another. Water become a layer of hydroxyl ions and protons. The electrons adjacent to water electrify collagen and the result is a self assembled triple helix. Nothing else is required. Gelatin in your bone broth is collagen in water with no charge separation happening. If you pass an electric current through your bone broth guess what happens when you look at it under a microscope? You see triple helices form. When water binds to collagen that is energized by the sun photons this is when water chemistry does some amazing things. Right next to collagen forms and empty space called the exclusion zone. Next to the exclusion zone electrons are separated from water molecules. Next to the electron layer we see a dense layer of protons which come from the hydrogen in water. It appears collagen allows water to separate into its constitutive parts to form groups of charged particles.

This concept is easy for a physicist to get but not for a chemist or a biologist, so if it confuses you read it several times. The reason it happens is because of the hydrogen bonds of water. Hydrogen bonds between water molecules inside the nanotube are shielded from fluctuations in the the environment , and are much more stable. Water in a cell is bound to protein and found inside of tubes made of carbon back bones. Collagen is the most abundant protein in the human body and makes up 71{a7b724a0454d92c70890dedf5ec22a026af4df067c7b55aa6009b4d34d5da3c6} of the proteins in us. In fact the alpha helix of collagen even has a water channel inside of it. Collagen makes up the scaffolding of your entire body. At every point in our body, water is designed to contact collagen because of how the collagen cytoarchitecture is distributed. **It is almost like water acts like an "electric wire" to activate collagen.** The collagen lattice work pattern has even been found experimentally to direct wound healing and regeneration in all life forms. Why is all this important?

When the triple alpha helix of collagen forms, the separated negative charges from water electrifies the triple helix of collagen and it forms a collagen tube, I call a nanotube. Within those nanotubes, there are only 0.02{a7b724a0454d92c70890dedf5ec22a026af4df067c7b55aa6009b4d34d5da3c6} of pairs of water molecules in contact distance (0.35 nm) that are unbound,

compared with 15{a7b724a0454d92c70890dedf5ec22a026af4df067c7b55aa6009b4d34d5da3c6} unbound in bulk water. It also turns out, hydrogen bonds in these types of collagen nanotubes are highly oriented when they are enclosed in these tight spaced tubes all over your body. This has already been proven experimentally in physics experiments many times over folks. To think about this go back to Energy and Epigenetics 5 and see how I described the sub arachnoid space of your brain from a neurosurgeon's view point. It is loaded with spiderwebs of these collagen nanotube submerged in an ocean of CSF. Getting the bigger picture yet?

So why is just confining water to a tube a big deal? Because water has special quantum abilities in this state that it does not have in you bath tub.

NON-GEEKS: Think of this analogy to hammer home this point home; **in a crowded subway, people's movements are restricted compared to what they are on the streets above, and hence the range of their energy distribution is narrowed towards the lower end of the energy scale.** Restricting movement gives you control over the protons and the electrons. Both of these are charge particles. The electromagnetic force only deals with charged particles. You might begin to understand then why biology uses the Schumann resonance at 7.83 Hz, and its harmonics, to control how biochemistry works. When you understand this simple example of how molecular crowding acts on charge separation and development, you begin to see why restricting water movement in a cell matches perfectly with the way life would be organized on this planet. This is because the Earth naturally has the Schumann resonance coming from its core with a ton of water on our surface. The Schumann resonance is only 7.83 Hz, and resides on the ***lower scale of electromagnetic forces*** that exist on the surface of our planet. The two physical things are found naturally on Earth and are coupled together, by collagen, to act in unison to begin to build the framework of the semiconductor of a quantum cell. The most common element on the entire planet is iron, a transition metal. This metal is vital in many critical pathways in metabolism and is also controlled by the electromagnetic force by using its various oxidation states from its D shell electrons. This also paints the clear picture why ionizing radiation is so damaging to a quantum cell. Ionizing radiation is in the higher scale of the electromagnetic scale of forces. If our cells had massive sizes with free floating water with lower amounts of transition metals in them we could handle much higher Electromagnetic energies to survive, but we don't, therefore we can't. To make it in this environment, life likely would have to use a different liquid, other than water, to form hydration shells around its carbon back bone proteins to better handle the higher electromagnetic forces that would be present. But because the conditions on our planet favor the lower end of the energy electromagnetic spectrum naturally, all chemistry, and therefore, all biology has to be dictated by this scale of energies in order to create order from the chaos on Earth. **BOOM!!!**

NON-GEEKS: The last 3 paragraphs are probably the 3 most important things you will ever read on this blog. They explain how all the things in Energy and Epigenetics 4 coalesce to form the basic framework of how life reacts to the

environment pressures. They have laser guided precision of how life forms assimilate the disparate parts found on this planet and make life work in a cell. It explains why life exists, as it does, on this planet. In that sense, life makes sense of the disorder it finds. In QED and Newtonian physics, as time goes on entropy also increases. In Newton's physics time was considered absolute and non varying. Einstein's relativity made us all realize time was not absolute either. It was relative to who was measuring it. This implies just the act of observation can throw reality off. This is hard for people to grasp, but it too has been proven to true many times by physicists. Quantum systems are supposed to be destroyed just by the act of measurement, which brings them abruptly into the ordinary classical world. This is another reason why cause and effect might not be that important as we all think. As hard as this is to fathom, it is a consequence of nature. This also explains why we should never rely on one test alone to judge clinical decisions. This one observation has had a huge effect on subatomic physics, but it has not have any effect biology or its researchers. They seem to believe "***their science***" is exempt from this physical fact. It should have caused them to consider the implications, because the business of biology happens at a molecular level in a cell. The molecular level of all nature is dictated by the quantum actions of atoms in these molecules. The problem is that biochemistry still does not understand how quantum effects present in biochemistry. You have to become aware of this, since they have not. I feel it is my duty to my species to keep harping on it. The recent work on photosynthesis should have made every metabolic biochemist take notice. It has not. They believe the quantum work is built into their reactions and equations. (See here for that belief) Nothing could be further from the truth. The evidence is everywhere if you just look for it. The real truth about time relativity, might be even a bigger shock to biology, because QED says time itself, maybe fractal and fabricated by our brain's to make sense of the queer quantum action of particles in universe. For those of you who are members you heard about Gilbert Ling in the November 2013 webinar. Now you need to understand how he fits prominently in to this story.

Them vs. Us

Philosophy detour to explain how two groups of people can see data differently

THEM = modern cell biology theory. **US** = people with an open mind to make sense of Gilbert Ling's work. I want you read this abstract from Jeanne Fahnestock, Professor, English, University of Maryland who discusses how a dispute between two camps who have opposite view points deals with one another in Rhetorical and Incommensurability.

Here's the abstract: Cell and membrane: the rhetorical strategies of a marginalized view

"Professor Fahnestock investigates another dispute in which the levels of animosity run high. She traces competing theories defining the structure and composition of the cell, in her chapter, Cell and membrane: the rhetorical strategies of a marginalized view,"focusing especially on disagreements over

the nature of the cell's interface with the world, its membrane or "wall." These controversies have necessarily involved debates over whether the cell is essentially defined by that membrane or by its internal substance—the container or the contained. As the very notion of a "cell" suggests, the container definition has become the orthodoxy that we encounter in classrooms and textbooks and TV ads for skin cleansers. But that view was challenged in the fifties and sixties by Gilbert Ling, a scientist holding a suite of heretical views, but someone who has always had supporters, and renewed in the early part of this century by Gerald H. Pollack. The Ling/Pollack view is seen by all concerned as fundamentally incommensurable with the current paradigm of cell structure; as such, it is ignored by the mainstream. But, Fahnestock argues, incommensurability (as Ceccarelli argues of E.O. Wilson) can be a rhetorical investment, all of the arguments arising from an uncompromising hostility in which irreconcilability becomes a self-fulfilling prophecy. Given the productivity of the current paradigm, there is no pressure to listen to, let alone accommodate, the alternate, Ling/Pollack (Associated Induction) understanding of the cell and its membrane. But, Fahnestock contends, there are parts of this view that are relatively amenable to the mainstream. The differences might be converted rhetorically into less serious differences of emphasis or perspective, and productive talk could ensue. But the Associated Induction side's investment in, and the mainstream's assumption of, incommensurability blocks reconciliation."

That is what this blog is all about … taking the things Gilbert Ling said in 1952 and plugging them in to things physics has already proved over the last 50 years while biology made up words to put in the crossword puzzle of life.

Most people buy beliefs and not the real benefits. This is why Occam's razor "beliefs" persist in biology. Occam's razor is what most believe to be true but it is not always the parsimonious way nature works…….when you think something sounds "kooky"…….it might be that "kooky" is parsimonious after all. Someone on my forum recently remarked that she changed her beliefs because she was not getting the results she wanted listening to her doctor's advice. She read my blog and decided to give crazy and shot, and low and behold it worked! And the reality is most of us just never saw "this reality" in your own fishbowl of understanding life. This is why it took so long for the photoelectric effect, theory of relativity, and the 30 step process of photosynthesis to be fully accepted by science. **They all break Occam's razor rule of parsimony**, yet, all have been experimentally found to be true in our universe. Ling's idea, was radical and not parsimonious, but it too, fits the way a quantum cell works. He was way ahead of his time, so far ahead that no one could fathom what his science implied. That no longer is the case. Experiments in physics and biology have finally caught up to Ling's work now. It is time we make sense of it for your health. The next few blogs are designed to do just that.

Life and health are not practical they are quantum and not parsimonious … time for you to readjust your ideas of what is and will never be.

Implications of Energy Loss and Entropy Gain: Back to Science

For living cells, this implies aging and disease are a consequence of a loss of energy and a increase of entropy or disorder in the system of biology that organizes the disorder. That organization is called a cell. Here we can see why Schrodinger said, what he said in 1941. To reiterate, he said, **life was organized around negative entropy and not energy.** This statement flies in the face of what biology and medicine are based upon. Since modern medicine and biology have many chronic disease they can not solve, it made good sense to me to go back and revisit what Schrodinger was implying before biologists of his day ignored his good advice. I thought it was a good place to start to see where we went wrong. I have a good analogy of how this thing call entropy works.

The Quantum Refrigerator Example

To make sense of this concept think of a modern refrigerator. Anything that increases temperature increases entropy in that matter. The hotter something its the more entropy it has. The colder it has the less entropy it has. This is another reason Cold Thermogenesis is primordial to all life, because it creates "free energy" just by reducing entropy and disorder in the environment. Astrophysicists now have shown that carbon monoxide is used in galaxy creation and evolution to cool the gases and dust to form a galaxy. Here is cold being used in the biggest macrocosm stage and my theory of Cold thermogenesis occurs on your cells microcosmic stage. It is built into the entropy equation of physics, and not just in the way life uses energy in its physiologic systems. Your heating bills normally go up in winter and your electric bills also go up when you use your refrigerator to cool and save your food. Here you can see how energy and entropy are linked naturally. You must spend energy to reduce the temperature to reduce entropy according to the laws of thermodynamics. What is not so obvious to most people, is that the energy is also required, to **REDUCE entropy** too. This is the essence of what I wrote to you in Energy and Epigenetics 6 blog, but in much more easy terms to understand. So entropy or disorder tends to get us both coming and going in life. This is why Schrodinger believed what he did, in my opinion. A refrigerator cools down its interior by design, and anything in it, by reducing entropy. It does this by lowering the temperature inside. Inside the refrigerator it's cold, but if you check the backside of the refrigerator you will find it is very hot. The reason for this observation? The refrigerator is taking the heat from inside the appliance around your food, and it is dumping it back to the environment of your kitchen. Entropy goes down inside the refrigerator, but it increases in the overall environment of your kitchen. That increase in entropy is actually measurable, and the net increase in entropy is completely dictated by the Second Law of Thermodynamics. It has been said that the Second Law of Thermodynamics is among the most rigid, and important law in Nature. Eddington, was the astronomer who proved Einstein's theory of relativity correct, said once, any belief that breaks the Second Law is a falsehood. It is an acid test for all things in nature. **I'd suggest strongly, you remember this quote.**

Life, as the quantum cell, does exactly what your refrigerator does in the example above. It is built into the design of the semiconductor of a cell.

Where Biology Got on the Wrong Bus

So where does this leave us today in biology? Why do I no longer buy modern cell theory and all that is based upon it?

Biochemists and biologists all believe in a Na/K ATPase to create the resting membrane potential in all living cells. This belief is still present in print in all biochemistry textbooks you can buy anywhere today. I believe this is the reason why biology has incorrectly filled out "Nature's New York Times crossword puzzle" with the incorrect words. This is the one major part of the puzzle they got really wrong. And this one error allowed them to make many other errors as time has gone on. This is why medicine today is struggling with solving the puzzle of modern neolithic diseases in humans. If this idea, biology believes in is, in fact, true one must look at this biologic dogma closely. The membrane pump theory of a living cell only contains free solutes and free water. And free solutes and free water can not provide for negative entropy by the laws of science anywhere in the universe. When I looked at the context of the history of how this theory was presented, I found the answer to my own puzzle. The biologist who came up with this theory were trying to fit a set of circumstances they found experimentally but could not explain based upon the science they knew at that moment in time. They simply thought about the problem, and when they could not find the answer, they added a pump to the membrane to explain the set of circumstances. Let me be clear, there was and there never has been any proof that a pump does what they say it does. There was even a bigger problem for biology. When a scientist named Gilbert Ling came along, and measured the energy requirements of this pump idea he found that it broke the second law of thermodynamics by a wide margin. **Richard Feynman, a physicist, famously said, that if your theories do not match the experimental data your theory is wrong.** Everyone in physics seems to understand this, but what happened in biology back then still astounds me. Without any firm explanation of how this pump works on a bioenergenic basis, biology accepted it as fact, and it has become biologic dogma over the last 50 years. In fact, three Nobel Prizes have been given to "***the scientists***" who came up with this idea and ideas tied to this idea.

Rigor Mortis: The Example That Shows You Biology is Dead Wrong

Even if you are not a biology or physics geek to understand bioenergenics data, why do I find this pump idea preposterous based upon my own observations? Let us consider human death. Most of us know when someone dies eventually the body gets rigid. Funeral directors and pathologist have to deal with this all the time in their jobs. When a human dies a dead cell becomes more rigid and this is something called rigor mortis. Based upon the common sense biology likes to use, one might expect that a dead human cell has to have more negative entropy or than a live cell would have, yet, here is an example showing you that when life dies, it does not not have more

negative entropy, it actually has less! **It becomes rigid and non moveable.**

Nature is trying to show herself to us, with these observations, but we 'ain't' listening. This is why a cookie crumbles and does not reassemble itself. It is why we can not reassemble vases that have fallen and shattered, it is why scrambled eggs can't become whole eggs again. It is why "Humpty Dumpty" and all the kings men could not put him together again. This was a big clue to me that Schrodinger and Ling were both more right, than the biologist were on membrane pump theory and how life animates itself. Schrodinger firmly believed his entire life that negative entropy keeps humans from death. I have read all his works and he mentioned it frequently throughout his career and life. His book, "What is Life" has been reprinted 20 times since 1944.

Does Physics Really Dictate Biology?

So this leaves us at a fork in the road. Ling and Schrodinger are either wrong or membrane pump theory is wrong? So who is wrong? I believe Gilbert Ling's experiments completely exonerate Schrodinger's insights on life were spot on. I realized pretty quick that rigor mortis was a key observation to this paradox. Moreover, it is no surprise why every dead person I have ever seen gets rigor mortis now. So this means in the long run, a quantized molecular system left to its own devices, becomes disordered with time and then it dies eventually. This implies that a cell controls the environment in its self assembled design. It is how the cell is built that is paramount. DNA and RNA only make up 1/4 of life semiconductor design. This is a radical shift from the belief that genes are the most important part of biology. I also realized that all life ends eventually, so that implies no matter how much energy we pump into life, we can not avoid the "horseman with the scythe" forever. **But it does imply we can delay his arrival if we understand the rules of engagement of the quantum cell**.

How do we slow time, aging, and death from arriving? We do it using quantum cell theory. I have been giving you bits and pieces of this Quilt of life now for close to 3 years on the blog. I gave you all the 30,000 foot view of my vision in Energy and Epigenetics 6, but today we are going get into how a cell actually is organized to make this happen. Many people believe going back to a paleolithic life style would suits us well. I happen to agree it is a better way to handle modern life, but it is not close to optimal for modern life. For me, the quantum age entails a shift to a truly organic way of living and perceiving the world that will change the very meaning of life itself. The possibilities it holds are enormous for us all.

How does a Quantum Cell Work?

Gilbert Ling was the first biologist who began to look at this problem carefully and systematically, because he knew the Na/K ATPase broke the second law of thermodynamics. He also understood water chemistry before anyone else. He was so far ahead of his contemporaries they used that against him. They could not fathom he was right that a cell was electrically induced and the field of action was tied to how water and protein backbones played

ball together in cooperation. **He began to look for a new guiding theory that played ball within those boundaries**. He believed, and rightly so, that there can only be one state where all molecules all fit together to make life happen.

He also was the first to realize that there were far more states that could exist than one could ever imagine. He realized in order to make order from chaos, **life would need a backbone to stop the free motion of molecules within a cell.** He also realized that part of the story would be tied to self assembly of the component parts to save energy to be in alignment with the Second Law of Thermodynamics. Ling knew that life could not circumvent the Second Law, so he knew intrinsically that the game of biology had to be between theses "foul poles" so to speak. What he did not know, at the outset ,is how the game was played between those lines when he began his work. Ling showed us it was the action of the protoplasm of the cell's contents that limits molecular motions (Brownian) using proteins coded for in DNA.

It does this because primary and secondary protein structure is determined by the intermolecular actions of the side groups found on the amino acids that life dances upon. It turns out, this is why DNA codes for these proteins in all life forms. These proteins are unique in having this intrinsic ability. It also helps explain why proteins and amino acids are rarely mutated in life. Once life finds a protein that has favorable molecular chemistry it acts to conserve it in DNA and RNA codes. Changes rarely happen in those genes. We did not know this 30 years ago but we do now. In fact, apes have had more gene changes (244) than humans have (141) yet we possess many more attributes than they do. This is something neo-Darwinist have repeatedly gotten wrong. Traits do not come from DNA code alterations, they come from epigenetic changes that control those gene products. **Non-coding parts of the DNA are not genes. Non coding parts of the code are a quantized instruction manual of how the code works with the other parts of nature found on Earth.** And it turns out, modern science has found experimentally what controls how those genes are expressed, however, always always changes second to second. Evolution is a constant force acting upon our non coding quantum instruction manual.

Here is another reason why I am considered a radical. Genes are not the stage life is played on in a quantum world. How they are expressed is where the action really happens. This is why modern medicine badly needs a paradigm change. It is long overdue. We need to get clinicians and scientists to take their eyes off the molecular nuts and bolts, called genes, to think about bigger questions, such as, what is life really? Ironically, this was the name of Schrodinger's book in 1941! **The epigenetic changes also tend to follow the same principles that we saw in our refrigerator example above.**

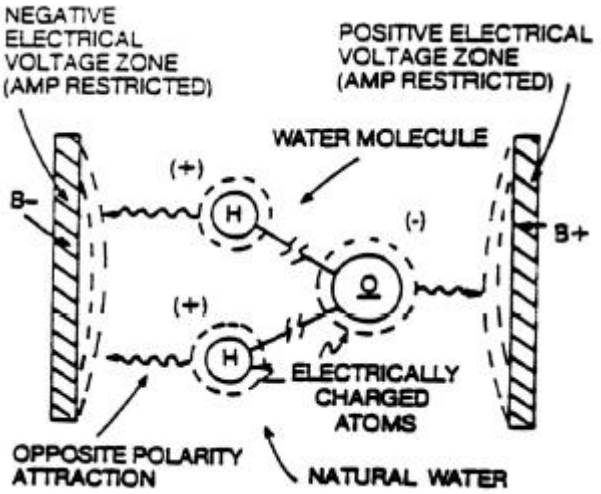
Epigenetic programs seem to always look improve how to 'reduce entropy or chaos' and make sense of what the environmental pressures are at this time. **These proteins tend to have very specific and correct intermolecular makeups to limit molecular motions inside a cell and let electrons and protons, the charged particles, move freely throughout the organism to do life's business.** It appears life is organized around precise capture of photons and electrons from the sun. How it makes energy is all based upon QED and not the classic

biologic dogma all physicians and scientists learned in their training. These proteins have side groups that have special molecular abilities. The exposed side chains on their backbones tend to like to bind water to form hydration shells. They do this without any energy being added. It is a self assembly free of an energy charge. This helps the cell obey the Second Law of Thermodynamics. **The correct primary and secondary protein structures of these proteins dictate how water can or can not bind to the back bone.** The instructions for this blueprint are built into the DNA and RNA code. No other energy is needed for this maneuver either. This binding has huge implications on how biochemistry can or can not act within a cell. Tertiary and quanternary protein bending **do require** energy to occur. This is why bent proteins seem to be found in many neolithic diseases today.

It turns out, the energy is transferred in a human cell just as energy is transferred on water from the sun for plants and trees. We are designed to eat sunlight in this sense. Food is the go between of how we do this. The system of transfer is complex in plants and trees. It has over 30 steps recently just worked out, in photosynthesis. In animals and in humans, the process is even more complex and still not well known because the NIH still believes ATP can energize life with its measly phosphate bonds to overcome the energy of activation of biochemical reactions. It can't because no one has shown how the energy of activation is tallied and follows the first two laws of thermodynamics without ending up with negative energy. Life can never have a negative check book and still be considered alive. The energy cost of the Na/K ATPase breaks the bank account by 5 fold energy costs!!! Who did that math? Gilbert Ling. Gilbert Ling's AI hypothesis is the only theory that begins **with this monumental task in mind**. Does he have it all correct? No, I do not believe he does, but he has the basics correct because they follow QED principles and they are thermodynamically perfect. No one in biology can claim what he can. He is an unknown giant in biology whose work you must get familiar with.

Ling's Quantum Magic?

Water chemistry and the magnetic field of Earth act to polarize water around these proteins while simultaneously excluding solutes to provide the energy required to provide this negative entropy that life requires.



The photoelectric effect provides the electric induction to accomplish charge separation to polarize water. It become even more effective when water is confined to small spaces below 3 nanometers. This helps explain why the human subarachnoid space is filled with alpha triple helical nanotubes of collagen fibrils

Simply, the electrical polarization of the water molecule is basically a five step process.

- First, oppositely charged electrical voltage zones are simultaneously introduced to either side of the water molecule.
- Secondly, the water molecule becomes electrically polarized (electrically charged).
- Thirdly, this electrical polarization of the hydrogen and oxygen atoms greatly weakens the stability of the water molecule.
- Finally, because the voltage zones are still present with their opposite electrical attractions, the water molecule is split into its component parts. The hydrogen and oxygen atoms separate, with the hydrogen being attracted to the negative electrical voltage zone, while the oxygen is attracted to the positive electrical voltage zone… all simultaneously.
- Water polarization in tight spaces allows for proton electricity to begin. We call this “protonicity.” **Proton conduction is the QED reason meridians exists at acupuncture points.**

ATP is not an used to provide the energy of activation of biochemical reaction as is universally believed in biology. Did you know ATP could be made from ADP without energy input within the pores of cellulose acetate films that just harbor low density water? It is true, but your biochemists do not know it. If they do not know that means neither does your doctor because that is who taught them biochemistry. ATP’s real quantum value is found in unfolding the proteins made by DNA, to maximally expose water bonding sites on the amino acid side chains of these proteins. When these peptide bonds (-

CONH-) become exposed water is allowed to polarize these protein chains. This forms alternating chain of -CO and NH+ fixed charges that become excellent attractors of water. This causes water to layer on top of itself via hydrogen bonding forces in water in a cell's protoplasm and form a **polarized liquid crystal** that begins to act as an intracellular semiconductor. As photons or electrons are added to this structure of water more electricity or protonicity is developed.

Did you know sunlight is life's main battery?

Take a close look at the picture above. Sunlight is all that is need to charge separate water to create and negative and positive charge that the Earth's magnetic field lines up and then the electric charges become controlled by the electromagnetic force. Sunlight alone can make a semiconductor supercharged. This is precisely how photovoltaic cells work. Life di

Gerald Pollack and colleagues discovered that water structured as massive exclusion zones on hydrophilic surfaces not only have a high degree of (liquid crystalline) order, but also a large negative electric potential resulting from a macroscopic charge separation so that an excess of protons end up outside the exclusion zone. And it is sunlight (**photoelectric effect**) that causes the charges to separate, providing an instant 'water battery' for energizing life. This begins to explain why as an embryo develops, conditions become favorable for stimulated coherent emission of the trapped photons from the sun. It has been observed that death in organisms invariably begins with a sharp increase in the intensity of normal light emission. All of this implies we creatures of light, which is part of the electromagnetic force in the universe. Recently, the semiconductor industry just found out what Mother Nature already knew: that just using light alone can increase electric current induction by 400{a7b724a0454d92c70890dedf5ec22a026af4df067c7b55aa6009b4d34d5da3c6} to improve energy efficiency. Hyperlink

These actions occur simultaneously to allow water to become coherent for energy transfers that all power the biochemical reactions we all learn about. To understand the concept of coherence, stop for a moment and think about light. A light bulb in your lamp turns light on in your room so you can see, but a laser beam is a stream of focused photons that can cut through a diamond. At their core, both are just made of the same thing, light. But how they are structured changes their physical capabilities. The same thing happens to water, collagen, and proteins in your quantum cell. Water in a cell, also has some of the unusual properties that a laser has and your lamp bulb does not. ATP is made from electrons from food and those electrons originally came from the sun's light. Water and protein contains protons to provide energy to this water semiconductor. In this way, **ATP electronically induces water to polarize and animate life.** This is what Gilbert Ling said in 1952. No one heard him.

In the last 55 years guess what biology has found? This is exactly how plants do it too, but on chloroplast membranes. The quantum chemistry uses different proteins but the mechanism of action is the same. It turns out humans have

also been found to use quantum electrodynamic principles too, in bone, eye sight, and along their inner mitochondrial membranes in those 55 years. Since Ling's theory, biophysicists have now experimentally proven that water in polarized in this fashion happens to be extraordinarily good at being able to conduct ***resonant energy transfers over long distances.*** Remember the electromagnetic force is the strongest natural physical force, and it has infinite range of action. Polarized water is also excellent at conducting positive electricity (protons) by allowing protons to "jump conduct". It has been shown that polarized water can allow proton migration along its hydrogen bonding network **40 times the capacity** found in bulk water that is not polarized by these peptide binding sites.

Ling experimentally found found that ATP's main function is not that of a high energy substrate when it is hydrolyzed, as modern cell theory teaches us. ATP is designed to unfold proteins fully to open their carbonyl and imino side chain groups to intracellular water, to allow binding and polarization to separate water into subatomic particles that are positively and negatively charged. This allows water to form polarized layers and the Earth's magnetic field then orients these polarized crystals to allow for the formation of massive super conducting proton cables all over your body. This gives you alternating positive and negative poles around these proteins. He found that the orientation of positive to negative water molecule binding was 3.1 Angstroms apart when theses conditions are met. These alternating charged poles **ADSORB** water and polarize and orient the water correctly for super conduction. This is where the main source of energy in a cell comes from. It is not from the hydrolysis of ATP. I told you in Energy and Epigenetics 4 that all life is tied to 3 simple natural things. In this blog, you are finding out how those 3 simple things are quantized and assimilated to bring your cells to life so you can learn how you really work.

An example of how this works in real life for the NON GEEKS? A member on my forum recently posed the question, "we hear that ketones are a great brain fuel: they provide more ATP than sugars, burn cleaner, and may possibly be the preferred fuel, etc…….we also hear that ketosis works for refractory seizures and there are case reports and a few small studies showing benefit in autism, Alzheimer's and possibly other neurodegenerative diseases. It appears most everyone reports sharper cognition and sense of energy/well-being. The confusing part for me is that many people also report poor sleep with ketosis. Why is just changing food, and no other variables, often linked to reports that their sleep worsens? It is a common complaint and I can't yet make sense of it. Can you explain it to me?

My Answer using Quantum Cell Theory: The answer to this is easy, yet complex, but buried in the science of the Energy and Epigenetics 6 blog post. When you eat a more ketogenic template you make more ATP to maximally unfold proteins. This is based upon the ability of one mole of glucose only making 36 ATP vs 147 ATP from the beta oxidation of fats. ATP's main function in a zero entropy quantum cell, opens protein conformational structure to expose more water binding sites in proteins. **When this occurs the amount of ATP is stochastically linked to potassium concentration inside the cell.** This is why potassium is found inside all cells and sodium is not. Sodium exclusion is

not due to a membrane pump as most biochemistry books say. Gilbert Ling proved this mathematically and experimentally close to 50 years ago. The only reason his work was not accepted was because biology does not realize that energy in cells is generated by semiconduction of charged particles that are separated from water. Becker's proof on Ling's conceptual framework did not come until 9 years after Ling showed why K (potassium) and Na (sodium) are included and excluded because of the semiconducting currents found inside cells energized by sunlight. This has been further proven in the molecular actions of rhodopsin, melanopsin work in the retina, and actin and myosin in muscle by Gerald Pollack, all using photon semiconduction.

So if you all of sudden you begin to eat ketotic, but you remain dehydrated (by virtue of a high BUN/creat ratio) and you can not fully take advantage of the energy surge delivered to water by ATP because you are dehydrated. Water is designed to bind to very specific parts of proteins and when this happens potassium binds to other sites on the protein back bone. This make an "intracellular gelatin" protoplasm that limits the rotational molecular freedom of potassium and water in the cell. This is how a cell structures its water from bulk water to structured water. Structured water means it lines up in an antiparallel fashion end to but and but to end. This puts the more electronegative side containing oxygen to the next too hydrogen atoms. In this fashion, it creates the reverse water micelles around proteins I spoke about in Energy and Epigenetics 4, 5, and 6. This allows water to become a superconductive cable in a cell to transfer energy in resonant fashion. It allows water to gain a three dimensional structure of a liquid crystalline lattice to perform quantum magic in tight spaces within the cell. Moreover, all cytoarchitecture made of collagen is touching this latticework of water in every square nanometer throughout an organism to allow for coherent resonant energy transfers. **These transfers occur on orders faster than neurologic action potentials.** This implies if you are dehydrated and then switch fuels you have only done step one correctly on a molecular basis. If you go back and look at the Cold Thermogenesis protocol I gave you two years ago closely, it says we should drink 32 ounces of cold water before you begin. Why should we do this? If you have followed what is in this response it should be clear that it is fruitless using cold alone to increase your direct current of electron flow, if you don't have the water to make the superconducting cables to begin with? Does this make sense to you now?

ATHLETE NON-GEEKS: It also explains why supreme athletic performance hides from many athletes. This also explains why people who go ketotic, lose sleep efficiency because they are usually dehydrated because they used to be eating a diet that makes mostly 36 ATP from glucose and not 147 ATP from fats. Moreover the observation of poor sleep with ketosis, "sheds light" on the idea that ATP is not a high energy anything substrate for anything as Ling suggested in 1952. If it was, ketosis alone, should make you a zombie in terms of sleep, and it does not. Water is the key ingredient for sleep, and the October 2013 webinar showed my members a new reality of quantum cell theory that will simply stun you to that a reality may actually be at work in the precise quantum molecular mechanisms of why life sleeps. Becker found in his experiments the DC current is located beneath the myelin layer in neurons. It is in direct contact with the CSF that surround the brain. The

photons and electron in this fluid and comes from the sun's photoelectric effect. The human brain can't utilize more than 2{a7b724a0454d92c70890dedf5ec22a026af4df067c7b55aa6009b4d34d5da3c6} of neurons at time, or we faint, when glucose is used as the main fuel source; however, if we use ketones the number neurons we recruit for sleep or regeneration can rise. This implies Becker's DC current is stronger and sleep and regeneration occurs easily. Since blood is basically a fluid of proteins suspended in water, you begin to see blood is both a "waiter and hazmat team" for the brain, sleep, and regeneration. Ketones increase the "wait staff" and decrease the need for the "hazmat team." The proof that ketones work in this fashion is found in mitochondria. If I am correct they should lower NADH at complex one to allow for reversal of electron flow at this complex. This parallels what I have found in humans who we anesthetize for brain surgery. Gues what? It does work this way! Electron flow is bidirectional on the mitochondrial membrane.

Once the first water layer is laid down against proteins that are fully expanded conformationally, other water layers layer on top of the first layer to form hydration cells, called reverse micelles around the proteins. This happens not to cost the cell any energy because of the hydrogen bonding network effect of water being a magnetic dipole in the Earth's magnetic field. This sounds like Schrodinger had in mind when he said life organized around negative entropy. Many things can affect this quantum process but in todays modern world, non native EMF affects this step in 2 ways. First, it dehydrates you by direct effects of EMF, and secondly, it alters the hydrogen bonding arrangement that remains intact, due to the fact that water acts as a small magnetic dipole. **If water is not present, neither will the energy that allow life to animate!**

Today we know, when water layers around a protein within a cell it becomes a reverse micelle and self assembles when all these variables are present. It also dramatical affects its ability to catalyze the speed of biochemical reactions. This helps explain how cells overcome the energy of activation of these reactions. Even today biochemists and chemists can not explain the energy of activation of metabolic reactions they know exist in a cell. You would think that alone would get them asking better questions, but it has not to date. Ling's AI hypothesis does ask and answer these questions, and it explains it in detail why it happens. Moreover, it has been extensively tested experimentally. His electronic induction theory fits what we see life do observationally perfectly. MRI and PET scanners were both developed using Gilbert Ling hypothesis, yet ,you can not even find a wikipedia page on the guy. That is why biology is clueless, fundamentally.

A great blogger on the internet who is a hard core believer in high fat diets made this quote in 2007 about Ling: "Gilbert Ling does not believe in ATP as an energy source for cells (though he thinks it is a crucial molecule), any more than he believes in the lipid bi-layer cell membrane or the sodium/potassium ATP pump. He is truly out on a limb with his "Association Induction Hypothesis" of life at cell and below cell level. A fruitcake, obviously. Except his ideas on the localisation of cell water around proteins led to the invention of the MRI scanner. If MRI scanners

work, that cookie Ling is right. And almost all of modern physiology is wrong. **But, because MRI scanners work, this is the equivalent of thinking that the table in front of me is "solid" when quantum mechanics tells me that it is anything but solid … Now there's a thought."**

Yep……..and that thought is what this post is all about.

What DNA and RNA Really Do in a Quantum Cell: Quantum Music

There is a deep evolutionary reason why DNA and RNA only code for protein and not much else. This is completely lost on evolutionary biologists who think the gene is the smallest packet of matter that drives evolution. They are dead wrong. It too is a quantized process. Proteins are the rarest part of life's semiconductor. The other parts, water, the photoelectric effect, and the electromagnetic force were already primordial to Earth from the beginning. DNA only codes for what life needs and the Earth did not have naturally at its origin. The proteins formed by the chemical actions of the Earth core and the sunlight in water. The key nucleation point for this chemistry was polarized liquid water crystal is built into the carbonyl and imino side chains of the amino acids coded for by DNA and RNA. This explains why protein genes are so similar in most life forms on this planet. Genes, however only contain atoms at certain positions to make the quantize effects of catching protons, electrons, and photons feasible. It is not the gene that is special or selfish, it is the position of the atoms that hold together the subatomic particles that are primordial. This helps explain why chimps and us look a lot a like when we look at gene products. Where we radically differ is in our non coding DNA which codes for how we electrify and magnetize our DNA to a higher energy state to make a human from a chimp. Water is a primordial thing found on Earth therefore it did not need to be coded for on DNA. It was used by DNA because it is the perfect magnetic dipole for the chemistry of proteins that was made at the thermal vents on our ocean floor. These proteins self assembled in water that was already here. DNA and RNA evolved to code for these proteins. Water was always a given in Mother Nature's plan. Moreover, water also acts as a **quantum copying machine** too. It can imprint and code for DNA when no DNA is even present in a place because the water carries the electromagnetic energy and force within its molecular structure to make a "footprint of DNA" when it was surrounding this molecule in a reverse water micelle. Dr. Luc Montagnier has already proved this to be true, even though biologists still can not believe his experimental findings. I discussed his work on water memory in EMF 1 and EMF 2.

The reason potassium is critical inside a cell, and supersedes magnesium and sodium, is because it is naturally tied to beta and gamma carboxyl side chain groups found in proteins, where potassium specifically binds because of "quantum advantages". This is Ling's most impressive work experimentally and I would just tell you to **read cite 6** for the mind bending details.

A short explanation for the curious is as follows: These beta and gamma carboxyl bonds allows K+ to ADSORB to this protein site and donate electrons to the polarized water gel crystal. Each molecule of ATP in a cell controls

8800 water molecules binding sites and 20 potassium ions, to make this liquid semiconductor inside every cell of your body. Potassium acts like “the glue” to keep your protein back back bone and water in a gel state inside your cell to maintain the semiconducting plates together in a cohesive form. For every 0.3 mEq below 3.8 mEq that potassium is on a standard blood lab draw, means there is 100 mEq deficit inside a cell. I bet you just pulled out your latest labs to peak at your own values. LOL When potassium levels rise and fall you can tell how bad your ability is to carry a charge on your semiconductors. This tells you about their quality to carry charge subatomic particles to fuel your biochemical reactions.

WHY IT IS NOT A MAGNESIUM STORY

When potassium is low inside the cell, energy transduction suffers in polarized water. It is also explains why when any life form dies, potassium and water are released from a cell 100{a7b724a0454d92c70890dedf5ec22a026af4df067c7b55aa6009b4d34d5da3c6} of the time. When water and potassium leak out of the cell, salt linkages form between the muscle proteins, actin and myosin, because no more energy is present within the polarized water’s super conducting cables. This also completely explains how rigor mortis is observed to occur in human life and death situations. When we die, this is where magnesium becomes bound up in salt linkages between proteins to cause them to become rigid, and when these molecular changes occur Magnesium is stuck in those salt bridges while potassium is leaked into the outside of the cell. This shows you why magnesium is not a major cation in energy transfers in the most critical steps, because, it must have polarized water to leverage its full power. This is why magnesium can not do anything helpful, without the power of other parts of the quantum mechanism of action. Magnesium aficionado’s need to realize the most important role for the divalent cation is to make ATP in the mitochondria as a co factor. I said earlier in the top ten paleo supplement blog, and many times on my forum, without water, ATP or magnesium are powerless to get you to optimal. This is controversial when you believe biology that is printed in a modern text book, but it makes perfect sense when you understand how a quantum cell works.

The system of life requires all things to be working in concert together to animate life. When things work in concert together physics has a cool name for this: **COHERENCE** is that word. When some parts or missing or deficient, this is why one can still sleep badly when you are in deep ketosis based upon your dipsticks. The moral of the story: **DETAILS MATTER IN SEMICONDUCTION.** This is a key feature in most things in quantum mechanics. This is how a quantum cell really operates at its most basic function.

I might add here that the Quantum Cell I envision, really fulfills not just the first two laws of thermodynamics but also the Third law of Thermodynamics too. Few people talk about this law in biology because they do not realize Dr. Becker proved long ago we actually use semiconduction in our cells. Recently, scientists just showed, in detail how photons work with rhodopsin, melanopsin, actin and myosin. Every step is quantized. The third law states that, every substance has a finite positive entropy, but at the **absolute zero** of temperature, the entropy may become zero, and does so become in the case

of a perfect crystalline substance. Many people think we need to be ice cold to gain a zero entropy cell, but we don't when the cell become organized to become a liquid crystalline lattice. We get to this more in the summary.

LIFE IS ORGANIZED AS A LIQUID CRYSTAL: Why Ling's work opens the door to physics

Water inside a cell is that substance when it wraps around our proteins. And in doing so, it does it at "ambient temperatures" (not at absolute zero) because life always lives in a meta-stable state and not at equilibrium as biology believes. Life never exists at a true equilibrium point, until life dies. When a human dies, rigor mortis appears. Then it becomes rigid and molecular positions and motions predictable in a cell. Another way to look at this situation if you are a physics geek is the following: what happens when the organism dies? The cell loses it normal order and random thermal motions take over the protoplasm to destroy the coherent molecular orientation of the liquid crystalline state.

Very few biologist even know that this state of matter actually exists. In 1991, the Nobel Prize for physics was given for this emergent science, to Pierre-Gillies de Gennes. One thing is clear about life; it is fragile when its canvas is disrupted. This implies there is something special about living matter in an organism that is alive. The cell has a detailed organization, which, once disrupted, is extremely difficult, if not impossible to reconstitute. Ling was the first scientist to make some sense of it. But there were many others too. Austrian chemist Friedrich Reinitzer, biologist James Clegg, British chemist George Gray, British physicist Mae Wan Ho, and British biochemist Joseph Needham. Needham made the famous statement that, "***Liquid crystals, it is to be noted, are not important for biology and embryology because they manifest certain properties which can be regarded as analogous to those which living systems manifest and models, but because living systems actually are liquid crystals…***"

BIOCHEMISTRY GEEKS AND CALORIE DISCIPLES: The Second Law of Thermodynamics identifies the direction of processes that can occur spontaneously. However, **it says nothing about the rate of the processes.** Many thermodynamically favorable, or downhill processes do not actually proceed appreciably by themselves. They are often coupled to to other processes so that enthalpy and entropy cancel each other out. **The net work is never in red ink and in that way the second law is never violated by life lived in a meta stable state.** Energy transfer via heat, on which the science of thermodynamics is based, is by far the least efficient and non-specific form of transfer. This is why using a "calorie for any metric" in biology borders on absurd. It becomes absurd when you understand what QED says, and when you do not understand what she says, you become a card carrier for paleo dogma. For the lay biologist or chemist, who do not understand the quantum world, they can not fathom this is how life chose to animate.

Ironically, when they carefully examine the biosphere we live in, as science has demonstrated many times over to them, it is clear life does not make its living by absorbing heat from the environment. The entire ecosystem on earth is "one big energy store" maintained far away from thermodynamic equilibrium,

yet, biologist and chemist act as if that can not possibly be how ***we*** operate because of how "complex" it seems to them. To me that level of thinking is the type we must move away from to recapture wellness. Biophysicists have showed that symmetrical energy coupling and cyclical flows are both predicted from the thermodynamics of the steady state. This was done in the work of Onsager's in his development of the reciprocity relationship and the understanding deepened in Morowitz's theorem's. **These are published works in physics, that biology has avoided at your peril**. Biology and chemistry do not appear to realize this work has already been done. No organism can live like a "heat engine", nor can it obtain its energy or negative entropy by feeding on carbon or diamond pulp and burning it with oxygen. **Calories are for people who just live in a classical world of the past's using understanding of biology and chemistry.**

NON GEEKS: Our knowledge has been radically upgraded by QED. It is time we apply it to biology. Life actually revolves around and depends on catching an excited electrons, photons, and protons quite precisely, using specific proteins surrounded by water layers of limited mobility with specific hydrogen binding networks by means of specific light absorbing pigments. These photons and electrons are captured by water in liquid crystals surrounding proteins and then "tapped" for its energy, like a college student taps a keg of beer. They use it to do many other things college kids like to do. Once we tap this source of its photoelectric effect for its manna, then our semiconductors order the energy collected, while simultaneously allowing the electron and photons to fall back towards its ground state. In the process, our proteins capture the energy fall into water. Electrons and photons are part of matter. Atoms in us are also parts of matter. This stored energy in our liquid crystals creates a "***tunable responsive array***" of electrical charges. **When I say "tunable" I am referring to how you turn the knob on your radio station to listen to a specific music channel. Your DNA does the same thing. Its radio knob is the electromagnetic force in your current environment, and it pays attention to how you change that dial 24/7.**

So what tunes these electrons, photons, and protons? Here is where physics geeks comes in. All matter interacts……and what it interacts with comes down to 4 fundamental physical forces in Nature. The electromagnetic force is the most special of the 4, because it has somevery unique properties to control charged subatomic particles. It is very strong, and it has infinite range to act and tune things to act. This aspect of infinite range is what makes those, with just a biology background, so ignorant of the power of this force to tune and carry information instantaneously. Even the lay public knows this force has the power to deliver the internet to their cell phone no matter where they are in their environment. This lack of understanding is nothing short of amazing to me.

To put it in a physics perspective consider the following: Many people think it is just strong and weak forces that act to hold an atom together. It is actually the electromagnetic force that holds atoms and molecules together at distances. That tells you just how powerful it is. How does this force do this? The forces of electric attraction and repulsion of electric charges are so dominant over the other three fundamental forces that they can be

considered to be negligible as determiners of atomic and molecular structure. This implies that the electromagnetic force is the force that determines how all matter interacts with other parts of matter. The strong and weak force only operates inside the nucleus where the electromagnetic force is the one that allows all atoms to interact. Life uses the highest grade of energy from the sun's photons at all times, and in many forms we do not even yet perceive to control life's actions.

Recently, Washington State University researchers have achieved a 400-fold increase in the electrical conductivity of a crystal simply by exposing it to light. If they were reading biophysics literature, they would have known biology has been doing this for 3 billion years. In fact, when life taps the energy within sunlight, it is really tapping pieces of information of the knowledge that is the universe. This is akin to picking up the small pieces of a broken vase to try to reconstruct it. Each subatomic piece of energy is a tiny fragment of the vase the "great architect" dropped when the Big Bang occurred. This energy and information can be collected by our semiconductors, ever so slowly, over billions of years to reconstruct what happened the day the vase dropped and the music of life began. The more photons or electrons a semiconductor collects the stronger its electrical ability becomes.

This observation should make you realize how powerful Ling's AI hypothesis really is. It is based upon electric induction to animate all life. Electrons are the inducing agent. This means light is used to control those electrons to do the things we expect in biochemical reactions. There are many other basic particles in quantum mechanics that exist, but they naturally elude the action of the electromagnetic force because of their properties. I believe this is why life is organized around a charged particle like the electron. It creates the ability for a "Maxwell demon" to even exist. Because the electron is charged, it can be controlled by the electromagnetic force to do things Maxwell demon's allow it to do. I also firmly believe this is why "Demons" are only coded for by our nucleic acids. Locked within the molecular structure of those amino acids is the innate ability found in a piano or a radio. They can be tuned, refined, and played by a conductor, which is the electromagnetic force.

This mode of action is infinite in range to deliver and transform energy and information anywhere in you or the universe. This is the essence of what is buried in the laws of thermodynamics for life. Many of us seem to be unaware of that capability and diversity in the use of energy and entropy in life. That information is all buried in Maxwell's equations and Boltzman's derivation of the Second Law of Thermodynamics from Lord Kelvin's First Law of thermodynamics.

The packets or quanta of energy in sunlight alone, is sufficient enough to cause the specific motion of electrons in the outer orbital of molecules to change their rotational, vibrational, and electronic states to store this energy for later use. This energy is stored and moved at will for later use, and it is the energy that powers all biochemical reactions in us. It is on account of this ability, that living systems can populate their high energy levels on their semiconductors **without heating up the body excessively**, and hence contribute to what Schrödinger intuitively called the substance of

life, or its ‘negative entropy’. **This ability is why life does not need to be at absolutely zero temperatures to work, as the third law of thermodynamics might imply**, to a person who thinks ‘concretely’ about a law that was created in a statistical mathematical fashion. There is nothing absolute about its words, or its concepts in that Third Law of conservation. Most people who have a biology background, however, have “beliefs” about what it really means for biology. These ideas were given to them by people who have no idea how charged particles, and charge separation across membranes can be used by the electromagnetic force to animate life. What you believe about how the laws are applied is not material in the world of QED. You might ask why I say that?

Here is my simple explanation. This life, we have evolved, is designed to be a see a saw or teeter totter. This is a synonym for meta-stability. It can go up or down based upon what the cell faces in the environment it is put into. Life then organizes and responds to the stresses it faces. Those stresses can be measured in certain proteins in us, in an altered hormone panel, or in an image of an MRI or PET scan of us. They all contain information and energy about those electrons and photons in us. Randy, a member on my forum, just explained how the Quantum Mechanics plays its “roll of the dice” with respect to DNA: He said, “And don’t forget, all of these interactions are quantum and therefore probabilistic and not predictable. It just depends. So the outcomes may be different—that is, one person may be healthy and another contracts cancer. We are all different because of our quantum nature.”

That response captures the true essence of the physics, and yet explains why biology will never get it…….because they think life is concrete, when at its core…….it is quantum, and it can never be pinned down ever…….just like an electron can not be pinned down to know its correct place and momentum. This is the core tenet of Heisenberg’s Uncertainty principle. It is an obtuse concept to accept, because it is not how you perceive this world, but it is how the world works. No branch of science has better experimental data; nature is built on quantum mechanics. Everything in nature is built on these ‘queer principles’. To deny this, is to deny our true reality. How we perceive things is often far different than what makes sense, to our senses. Moreover, we need to begin to realize the science of the subatomic world is where paradox is the rule, and not the exception. Each time the discovery of new facts, the reversal or extension of accepted theories, reminded us that science is never finished.

The same is true of evolution. Our brain has evolved to make sense of these paradoxes of the subatomic world, using its own quantum computer as our decoder ring. It listens to “your piano”, it drinks your tapped beer, and it sees all the photons and it creates the life you are living right now. This is why we do not see them initially, we see perceptions of their effects via the Maxwell Demon’s built into your brain. We collect them and recalibrate their meaning, into something we can make sense of. It is why quantum effects appear so queer to us when we see them out of their context of how our brain collects them and translates them. But it is clear, we can understand parts of quantum mechanics without knowing it entirely. Consider humans now know whales, primates, and dolphins all have a language, just like quantum

mechanics does, but few understand it. Just because you do not understand their language perfectly, does not mean it is not useful. Many Americans visit France and get by with knowing 5 to 10 key French words. They did not have to master the language to participate in French culture or enjoy their trip. Quantum mechanics also carries the same benefits if you allow it too.

When you are looking for understanding or first contact with an intelligent species you must first decipher the sounds it generates. Once you do this you can use power law mathematic rules based in stochastic calculus to generate a sloped line on the most frequent sounds made. The slope will take a particular shape if the sounds have a coherence to them. In this way you know what you are hearing is an intelligent language. Then you know you're talking to intelligent life form, even if you don't understand a thing they are saying. The same thing is true with quantum mechanics. Its experiments show us, the key logic slope is present in biology. We know its true, without truly getting all the details. The laws of thermodynamics have presented biology and medicine a huge problem for decades. All modern cell theories of the action of energy of activation of human biochemical reaction have gone unexplained and unproven by experiment. Ling was the first guy who explained how it really happens.

Gilbert Ling measured this and found that today's beliefs about sodium poatassium pumps in membranes all break the Second Law, not by a little amount, but by a massive amount. If your experimental data does not fit your theory, your theory is wrong in physics. In biology, the belief 's of many influential scientists has been allowed to permeate medicine for a century. To this day, they still believe life lives at a constant equilibrium state, and it clearly does not. Rigor mortis, being the most obvious case in point, of this fallacy. This is why biologists/biochemists avoid discussions of the Law of Thermodynamics, and think calories make more sense in diets, because it is something they "can rationalize and explain". Their words on calories are echo's of errors. Words, such as these, can be meaningless when they are used in such a way that no sharp conclusions can be drawn or found in experiment. Calories only work in closed systems that function at equilibrium. But when you have experimental proof that we have quantized physiologic systems in us, it implies we are designed to be meta stable as we live. When we die, then we return to equilibrium. Energy flow is of no consequence unless the energy is trapped within the living system where it circulates, to build up structures for storing the energy, and to do work before it is dissipated.

The Purpose of Sleep

When the quantum cell loses its organization, we become rigid and it is here we truly face thermodynamic equilibrium; we call that death. **Quantum Sleep is how we stay and remain in the meta stable state, in case you were wondering. This is ultimately the reason why all life forms must sleep.** This is why I told you 3 years ago, sleep was the primordial state of life. Life is organized around this quantum principle. It is the ultimate purpose of sleep for all life, in my opinion.

The amount of sleep an organism needs is directly tied to how well the organism deals with “entropy dump” back into its environment. If you do not dump it back into the environment well, you need to sleep more. If you dump entropy back into the environment well, you need to sleep less. No one has that understanding of the purpose of sleep because they do not have my understanding of how a quantum cell works.

I want to be even more bold: What is the point of evolution? Was Darwin right or wrong? I think if you have been reading my blog you know I have a big problem with parts of Darwin theories because he could never explain how the condition of existence determined traits. From Darwin to Richard Dawkins they believe it is in the gene. Not true. Neo Darwinians have been trying to ram this BS down medicine’s throat for 100 years now and have succeeded because guys like Dawkins can use words well even when the story just does not add up.

I also believe, it is negative entropy, that really drives evolution. This blows a hole in all the neo-Darwinian dogma that is ruling evolutionary biology today. Go back and re read the “refrigerator example” above if you need to understand this point, because it is important.

NON GEEKS IT REALL Y IS SIMPLE: **You might be beginning to see why cold temperatures are primordial to all life now. Cold induces sleep. Sleep creates meta stability.** I told you two years ago I had a lot of data I might be right, and your just beginning to see the world I having been playing in when I had my rebirth as a physician. Notice the symmetry in the word physician and the word physics? Do you think that is a coincidence, or has my profession hooked its wagon to the wrong science all along?

Becker finding the Hall effect in humans was a game changer for biology, because it couples cold, ketosis, sleep and regeneration in one fell swoop. Because life stores its energy in its highest states, in its semiconductors, it begins to make sense why cold increases electron currents in semiconduction. It turns out than any system that stores energy in its design build, is explicitly dependent on the space-time structure of the system according to QED. **This is why, I realized 8 years ago, circadian biology was the key to figuring this biologic crossword puzzle out.**

Now think back to the October Webinar of 2013 and all I shared with you there. Think about the thread on the forum about the October Q & A of that webinar. Do you see what I see now?

Summary

Schrodinger, Ling, and Szent-Györgi’s intuition, that energy and organization are inextricably intertwined with one and other in biology seems spot on. The use of semiconductors allow life to self organize. Human tissues are an organized system of excitable media we call semiconductors. Becker’s seminal findings, that bone was quantized in the 1960’s should have made us all stop and question things more deeply. Many other systems have now been found to use semiconductors and are also quantized. Biology did not absorb Becker’s work, because they do not read the literature of quantum physics that was

being born simultaneously, when the organizing principles of molecular biochemistry were just being uncovered at the same time. These tissue are filled with excitable cells poised to respond specifically and disproportionately to **weak low frequency electromagnetic signals**, because large amounts of energy are stored everywhere in them. When energy is abundant and entropy low, this automatically acts to amplify and rectify the weak electromagnetic signals the environment throws at our genome and epigenome. Becker was the first scientist to find this in biology in the 1960's in human bone and now it is found in the macroscopic actions we all see in life today. Quantum **Sleep is the greatest example I can give you, of a macroscopic quantum event. Mitochondrial respiration is another example. Vision is yet another. Soon I will show precisely how insulin changes the action on the mitochondrial membrane by just using the charges and the electromagnetic force.**

The one key lesson about self organized systems that physicists have learned is that they're what we call critical systems, which are systems in which significant correlations are evolving on every possible scale. That means the Earth, oceans, gut microbiome, on DNA and RNA, and the cells in us. So the answer, I imagine, is that evolution must be taking place simultaneously on a large varieties of scales. I believe all evolution is really coupled to co evolution. We are just one cog in a bigger coherent system of life on this planet. Today biology embraces that the information is coded on just one scale; that of the gene. They completely ignore many aspects of the non coding portion of DNA/RNA, even though humans have more of it than anything else in their DNA. They ignore it because they do not understand it. That I find ironic. I am reminded of a famous quote, "If science doesn't fit in with the cultural milieu, people dismiss science, they never reject their cultural milieu! If we are involved in science of which some aspects are not commensurate with the cultural milieu, then we are told that our science is flawed."

DNA plays its tune, you just have to adjust the knob on the radio that says, electromagnetic force on it. Within a coherent biologic system I would expect it to be expressed over every scale from the individual cell to the biosphere as a whole. So far biophysicists are finding experimental proof daily, of my intuition here.

Biology is the only science I know of that is more interested in their cultural beliefs than the results of experiments of the biophysicists. When you read their results you begin to see a new world for evolution. Thus, the probability that a gene will be reproduced has to be influenced by its effect on every scale imaginable, which means that evolution can act at every scale found within the electromagnetic spectrum in the universe. Remember this force has infinite range to play this kind of tune. Life is designed to catch the information and energy found in photons. The molecules that catch this photons are all nano-machines called molecular Maxwell's demons. These "demons" are all coupled so that we never break the Second Law of Thermodynamics. In this way, the heat of enthalpy of reactions always is balanced by negative entropy. **For the non-geeks, this means you can never spend more energy than you have in your cell. There is no red ink in the**

check book of life allowed. When you do develop red ink, you die.

Many people think entropy is just another word for disorder. I am making a bolder claim about what entropy really is. I believe entropy is measures the lack of information about the actual structure of the system itself. This lack of information introduces the possibility of a great variety of microscopically distinct structures, which we have trouble deciphering. This really explains to me best how quantum mechanics works. It allows for all possibilities to exist, but when one is observed, all the other options vanish like they never existed to us, but QED tell us they did exist in us. **Their existence is outside our ability to sense it.**

For the non geeks think back to the broken vase. If all you have is the information contained in the shattered pieces of the base of the vase, how can you know about the entire vase before it broke if you do not have all the parts? Simple huh?

Moreover, the subatomic particle that these "molecular demons" are designed to catch the energy and the information contained information about our universe, that we collect slowly over evolutionary time scales to become conscious. Yes, I believe, in our protoplasm is where information is collected and stored about how life is organized. It does not reside in our brain. It is in every cell of every tissue in us. **The brain is just the librarian who retrieves the data from the microfiche when it is required and is able to link the body and brain information when it is pulled to make sense of it when we need it**. All of this implies energy is not something associated merely with molecules or particles, it is associated with how nature organizes all around us in many ways. I believe everything in our world is fractal or self similar, for this reason. every part of us carries information of our whole. Every particle in the subatomic world does the same. **You can not know a person if you only have a part of them**. And this is why you can not know qauntum mechanics like you know the alphabet. We have not collected all the particles yet, so we can not have all its knowledge either. This is why "Mother Nature ways" remain a mystery to us. This is how fractal organization proceeds in nature. To me, this makes implicit sense, because it is so simple a concept, whose time has clearly arrived to be considered. Many people have asked me why I have such disdain for the published literature. In this blog, lies the answer. I was taught to believe that everything in the literature was based on proper assumptions about cellular biology. As I got older and more wise, I began to realize, a theory is only as good as its assumptions. If the premises are false, the theory has no real scientific value. When I realize this, I realize what was published was pure rubbish, because it was based on classic biologic ideas and not quantum ones. The only scientific criterion for judging the validity of a scientific theory is a confrontation with the data of experience. Gilbert Ling proved experimentally, the our assumptions were wrong in cell theory. This was the day I embraced my species as a quantum being.

People today need to discover the joy of being truly educated, thinking clearly, and reflecting deeply.

What happens when your guiding theory is wrong? Watch this video.

Leave a comment.

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