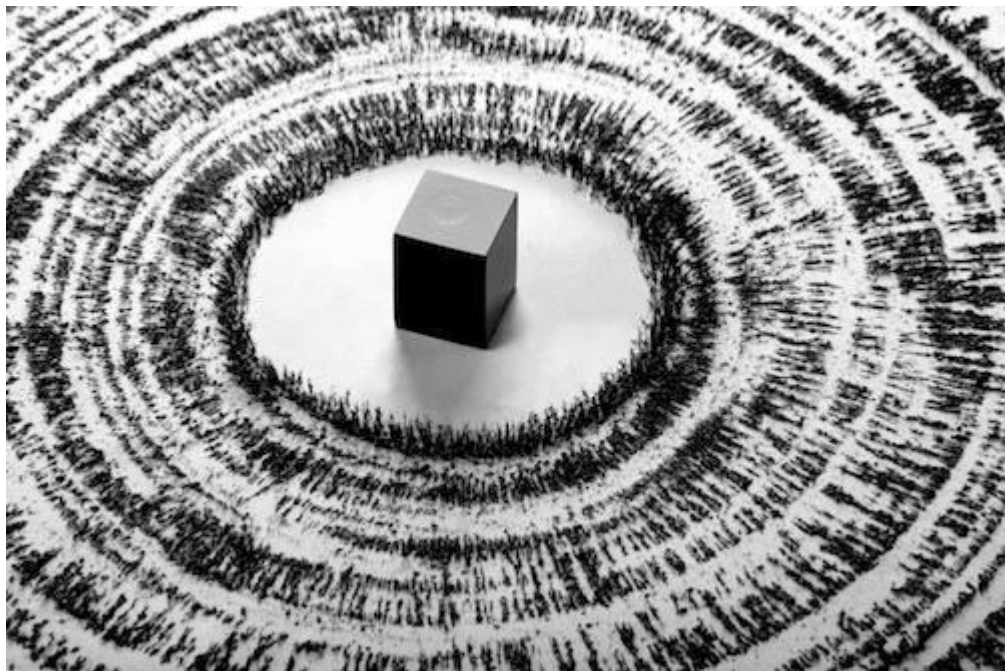
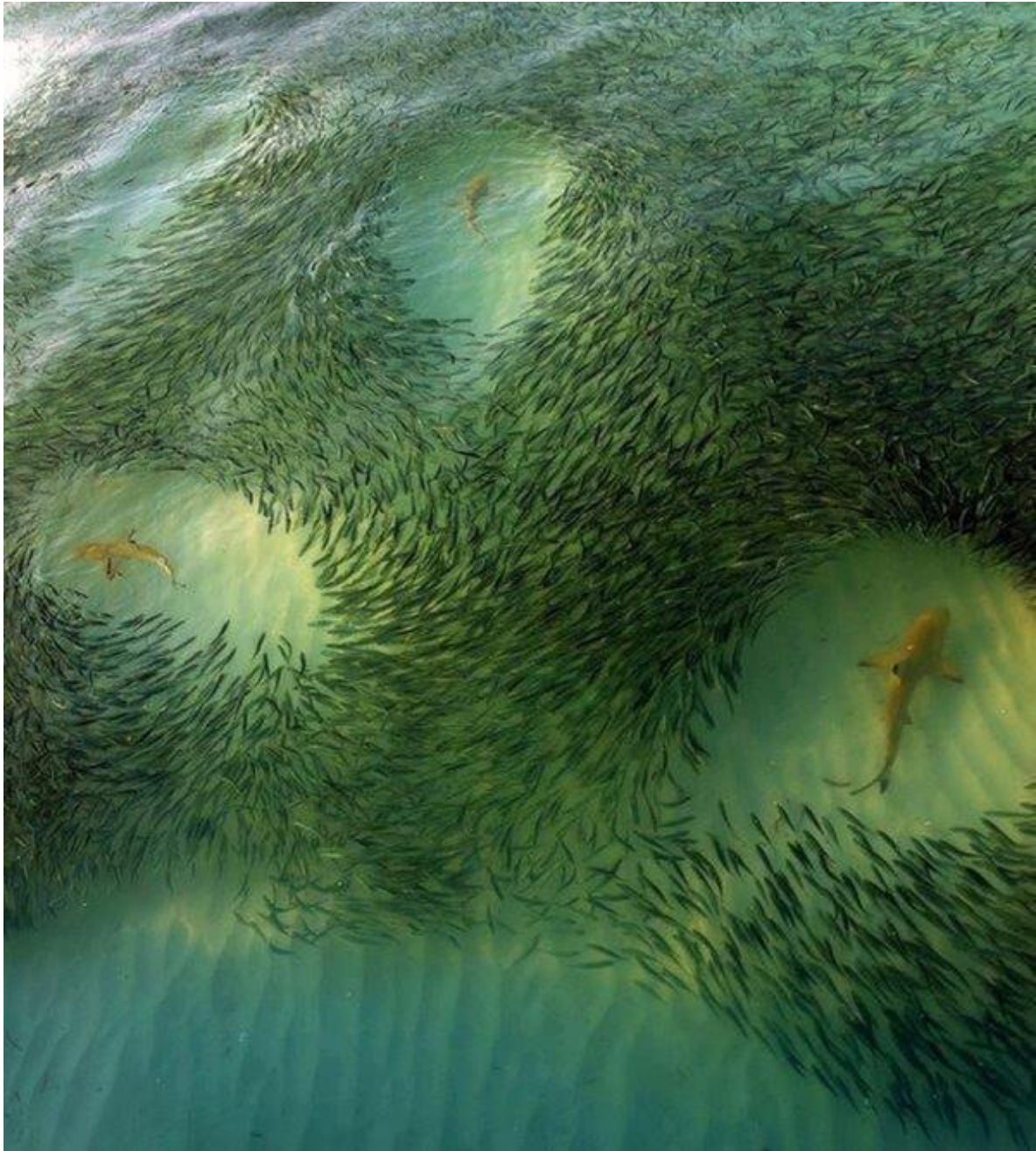


TIME # 25: HOW DO MONOPOLES MAKE TIME FOR CELLS?

Blog Take Home: Magnetic monopoles create time doing things today's paradigm says cannot be done because they haven't yet seen a natural monopole. Just because we have not found one, doesn't mean they can't exist. Is absence of evidence absence of effect? Might magnetic monopoles be made transiently to support the Quantum Zeno effect? In this blog you'll find out what this means. Might the reason humans are blinded to their presence be cause if we did perceive them their energy could not be used? Starting with the restatement of Maxwell's laws by Heaveside, modern physics has taken the position that we should all suspend our search for monopoles. Today we know have evidence in a lab that transient man-made magnetic monopoles can exist on topologic insulators. This news has major impacts for physics and massive implications for biology because the Noble Prize was just given for this science this month. Might our current situation be as it is because physicists from 1880's were too eager to simplify Maxwell's equations to make the mathematics make sense to them? What nature does not forbid, will eventually happen. *I believe topology has shown us nature has been using monopoles for her entire existence.* Could it be that physicists really just don't understand how monopoles might **emerge** when certain local environmental situations manifest transiently in a cell as the environment for their production becomes favorable? This blog explores this new area of science.





Do you notice anything similar between these two pictures? These both should magnetic field effects in nature. The top one is an abiotic magnets effect on iron filings. The bottom is the result of electric and magnetic fields around predator animals and their prey.

Gravity is said to be “different” from the electromagnetic force because gravity has a polarity that is always positive.

In other words, *for gravitational forces, things with masses always seem attractive and add to one another.* What could nature be hiding that might have a negative polarity that could move things apart? **Might a magnetic monopole be the**

opposite of gravity? To many, this might seem foolish but we need to explore this further because it may explain a lot of what we don't know about magnetism and life.

A natural magnetic monopole has never been found in nature.

Therefore physicists in the last 1800's removed many of Maxwell's original equations that dealt with them. Many physicists over the last 150 years thought this may be unwise.

Paul Dirac was the most influential critic of this turn of events in physics. He wrote many papers referencing this belief in the 1930's. Not many have listened to his warnings.

Could it be the source of the negative polarity in things that give a thing a net negative flux? Recall that all living things have a serious net negative charge. Alos, recall that water goes from a neutral polarity in its bulk state, and then gains its net negative charge in the exclusion zone state when **UV** and **IR** light excite water to exclude protons in the exclusion zone crystal polymers of water. When you carefully read Nick Lane's latest book (THE VITAL QUESTION) you see there is a trend in biology to still wonder why life decided to use protons for chemiosmosis across cell membranes in all three kingdoms of life. Might the answer be because water and sunlight naturally create unbelievable amounts of protons free of an energy charge? Might it be when sunlight collides with water the electric and magnetic fields in light waves change water networks but also change the light wave themselves?

Could these changes lead to emergent properties in matter we still remain ignorant of?

GRAVITY AFFECTS THE PROPERTY SPACES OF THE COSMOS AND WE LIVE IN SUCH A PLACE CALLED EARTH. ALL PROPERTY SPACES ARE LOCAL IN THEIR EFFECT SO WHAT WE CAN DO IS 100% DEPENDENT UPON WHERE WE DO IT. THIS IS WHY ENVIRONMENT CONTROLS GENETIC EXPRESSION AND MITOCHONDRIAL DNA

JACK KRUSE

Ron Evans Of BEA systems (tech company) has examined this very idea over the last 25 years. It brought him to stumble upon the work of a Russian scientist. Eugene Podkletnov is a Russian ceramics engineer known for his claims made in the 1990's of designing and demonstrating gravity shielding devices consisting of rotating discs constructed from ceramic superconducting materials. These materials today are being used as topologic insulators. These materials act like a giant spark plug by using the charges in the electromagnetic force to show us what might be hiding the quantum secrets of gravity from us. The gravity pulse concept was born from something called Project Green Glow. The results of this now

defunct project are the EM drive that NASA is studying for longterm space travel. To this day, the EM drive works, but no one in physics is quite sure how it works via the known laws of nature. Rogers has created an EM-drive jet that does not control gravity but seems to take advantage of it. The EM Drive stands for electromagnetic propulsion drive.

From the smallest particle in mitochondria to the largest galactic formation in space, a web of magnetic and electrical circuitry connects and unifies all of nature in ways we are yet to fundamentally understand. These principles organize galaxies, energizing stars, animate life, giving birth to planets, stars, and cells. On our own pale blue dot, the topology of matter seems to control the weather and help animate biological organisms using light and the geomagnetic field of Earth. There are no isolated islands in an electric universe because the force that governs it, has universal range and power. At the largest and smallest scales of nature, it is the strongest force in the universe. Most cosmologists only study the electromagnetic force when it is spread out over vast distances present in the universe. Not many scientists are studying what this force does at the smallest scales of size as we see in mitochondria. One of the most fundamental changes that occur with this force is that it gets much stronger as the scale is shrunk. They have just begun this study because of the unusual effects science has found with topologic insulators.

MAGNETIC FIELD LINES DON'T CUT OR CROSS EACH OTHER. IN THIS WAY WE CAN BEGIN TO SEE WHY SIZE AND SHAPE CHANGES CONTROL THERMODYNAMICS IN NATURE. THIS IS WHY MAGNETIC SIGNALS CONTROL GENETIC MOTIONS MITOCHONDRIAL DNA DEALS WITH CREATION OF THE MAGNETIC FLUX SIZES AND SPACE INSIDE OF MITOCHONDRIA.

JACK KRUSE

Think mitotic spindles in cells. They act like thumb tacks for the tubules in the spindle.

Magnetism is everywhere around us if you look for it. In biology, few look for magnetism and that is why they do not understand it. Most biologists know oxygen is critical for life, and since it is paramagnetic and drawn to magnetic fields you'd think this would make them understand why oxygen is drawn to the terminus of the respiratory proteins where the ATPase spins at a fantastic rate to generate a magnetic field.

That one observation should change all of what we believe, but so far it has not made its proper mark. Any place life has mitochondria we are able to measure huge magnetic fields

with SQUID's, MEG, and EEG's. We know this, but we don't know what it means for cells organization.

We detect magnetic fields everywhere, even in the "empty" depths of intergalactic space too. Magnetic fields cannot exist without causative electric currents. We learned this from Faraday and Ampere experiments. From many other experiments, we've learned life is more affected by magnetic fields than it is by electric fields.

The naked electric force is 39 orders of magnitude stronger than gravity at large distances. As the scale shrinks the power of the electromagnetic force becomes even GREATER.

Mitochondria are quite small structures inside of cells. It turns out, as scale drops, gravitational power drops because mass also has to decrease. This is true in atoms too. This is why gold has the color it does and why mercury is a liquid metal on Earth. As the nucleus of these metals gets heavier their electrons speed up and this changes their relative mass.

These are due to gravitational aspects between the nucleon and the valence electrons in these two atoms. That $10^{39\text{th}}$ power difference between these two forces is a thousand billion billion billion billion times in strength. As the scale of action shrinks this effect gets even stronger as gravity power falls. All this points to the inalienable fact that the local physics dictates how chemistry operates.

EARTH LOCAL PHYSICS ARE SPECIFIC AND LIFE ORGANIZES AROUND THOSE THINGS

The electromagnetic radiation that reaches the Earth's surface from space as microwave background radiation is believed to be a consequence of the big bang and the evolution of the universe in the very first seconds of its existence. This type of radiation is characterized by its thermal energy distribution as a perfect black body in nature and has a nearly ideal Planck spectrum at a temperature around 2.7 Kelvin, while the maximum of its surface power density

corresponds to the wavelength of 272 GHz [6]. The solar radiation that reaches the Earth's surface has relatively small surface power density around $3 \mu\text{W}/\text{m}^2$ and comprised of *distinct frequency bands*, so-called atmospheric windows, representing those frequency bands that are not absorbed by the Earth atmosphere. They can be listed as

1. **radio window**—represented by electromagnetic wavelengths starting from 15 MHz up to 300 GHz,
 2. **optical window**—represented by electromagnetic wavelengths starting from 150 THz up to 1000 THz.
 3. **microwave window**—represented by electromagnetic wavelengths starting from 23.1 THz up to 37.5 THz.
- The magnetic field of Earth is another natural field originating from the planet core that extends to a vast space surrounding Earth, known as the magnetosphere. An important source of strong electromagnetic fields is atmospheric discharges, known as lightning. Rapid radiation releases, which accompany these natural phenomena, are characterized by high power densities and high frequencies. In living organisms, electromagnetic fields originate from the transmission of signals in the nervous system and from structures autonomously generating electrical impulses, like the heart (EKG), because this is where mitochondrial density is greatest. The same thing is true in the brain where EEG signals are found

The visible universe is constituted almost entirely of electrically active plasma that we can observe for a deep reason. Might there be a reason we are not supposed to observe the forces tied to gravity?

MATHEMATICAL INSIGHTS LINKS US TO CURIOSITY

You know Dirac and Pierre Curie told the physics world about

100 years ago or so it might have been a mistake to throw out the idea of a magnetic monopole? I covered that story in detail in Tensegrity 10 and 11 blogs. We also had a famous physicist name DeBroglie blow Einstein's mind with his theory in his Ph.D. thesis about how electrons really work.

DeBroglie work was dismissed by the Bohr et al. because DeBroglie could not answer a simple question at the Solvay conference in the 1920's. I've got a sense this was a bad mistake.

Maxwell laws of electromagnetism were once described by 20 equations. Maxwell's contribution to science in producing these equations really lies in the correction he made to Ampère's *circuital law* in his 1861 paper On Physical Lines of Force. He added the displacement current term to Ampère's circuital law and this enabled him to derive the electromagnetic wave equation in his later 1865 paper "A Dynamical Theory of the Electromagnetic Field" and to demonstrate the fact that light is an electromagnetic wave. Faraday proved it first when he experimentally found the Faraday effect, but physicists of the day wanted a mathematical proof that Faraday's simpleton approach was equivalent. Maxwell gave the world this proof and it was later re-confirmed experimentally by Heinrich Hertz in 1887. The Maxwell equations were simplified to 4 by Oliver Heavside by mathematical convention. What were the other 16 about?

Magnetic monopoles.

Why did Heavside cut Maxwell's equations to 4? Because no one has ever found a monopole to exist in nature. That seemed like a good idea then. Dirac and Curie were not so sure this was a wise decision.

Who cares if we find one? I do. Finding one would rewrite physics and biology rapidly, but most have no idea why I say it can. What if we put parts of nature together and are able to create a 2-D flat plane structure that can act like a monopole would expect? ***Flat 2 - D structures can polarize***

sunlight. Did you know that sunlight is unpolarized when it comes to us? Would it matter if the monopole was a natural or man-made? Would it matter if the monopole was transient or permanent? Would time care? Would you care? Would your cells care? Would time creation become biology's clear provocateur? Might it be that when quantum processes are at work in sleep where regeneration it is all powered by a transient magnetic monopole hidden in our cells by the action or the topology of our topologic insulators?



The picture above is a big clue to how a monopole can exist on a 2D surface. ***Spin ice has been shown to be a transient magnetic monopole.*** Welcome to the world of topologic insulators! My members got a webinar on TI's long ago and Time 24 was about TI's. Soon they will learn how our brain uses this pic above to make our memory to recreate reality and time."Spin ice," a solid material made of the elements dysprosium (Dy), titanium (Ti), and oxygen (O). The basic building block of these materials is a pair of tetrahedral groupings (crystal), with (typically) two Dy atoms (each of which acts like a tiny dipole magnet of its own) pointing out of each tetrahedron and two pointing in. This is analogous to the *orientation of hydrogen* atoms in water ice, hence the name "spin ice." So might EZ water be capable of making a transient monopole using non-linear optics of light? Could hydrogen fractionation and spin be tied to its creation? I think so. Ice and EZ

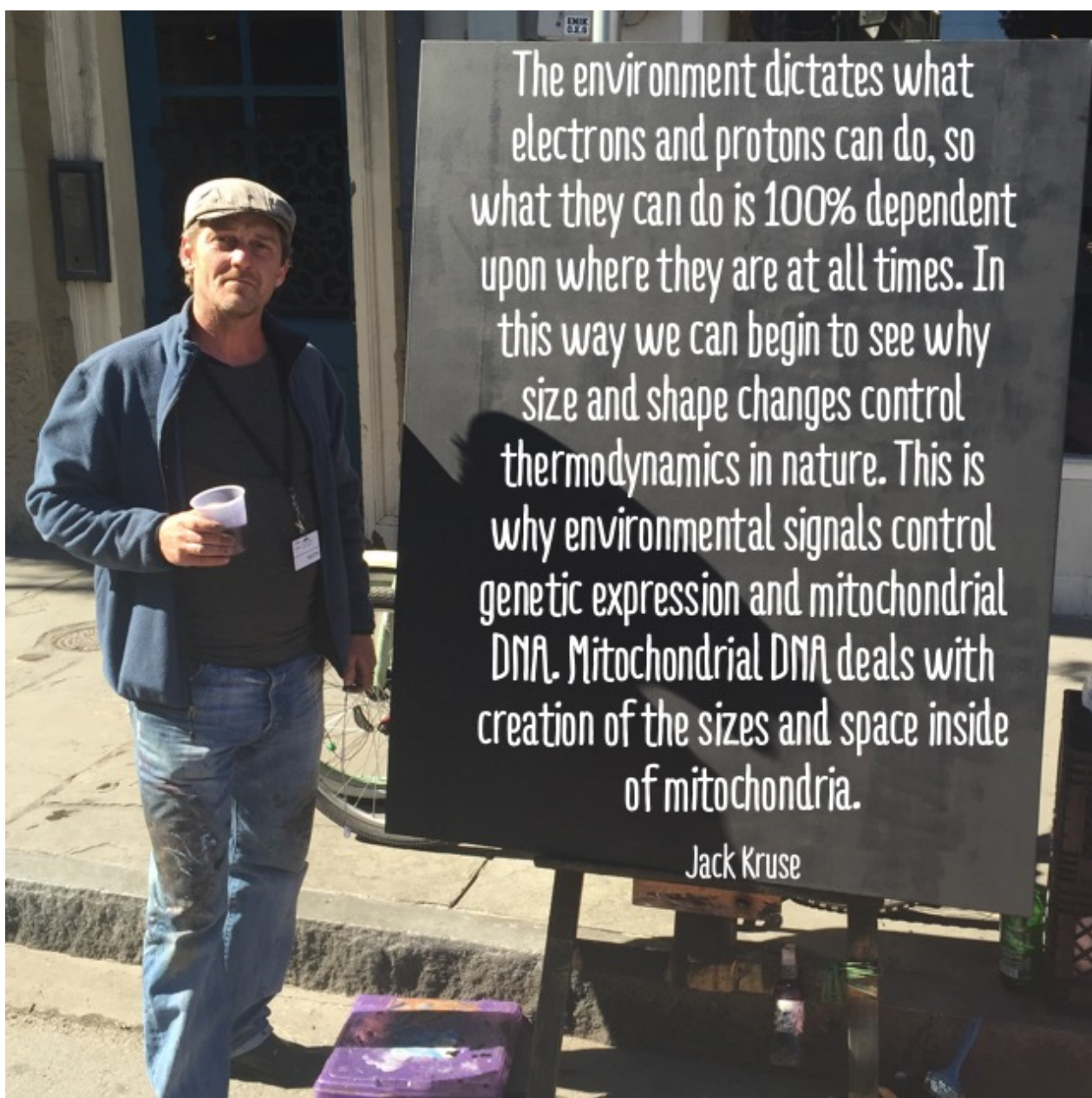
water have identical structures with one difference: EZ excludes protons and “spin ice” does not. Could this be man’s big clue?

THE MAGNETIC MONOPOLE PAYOFF: WHAT DO THEY DO FOR US?

If the monopoles exist and can be controlled and manipulated like electric charges, then it would open a new era for the modern technology and biology. Why? It is predicted that its immediate impact would be on memory storage devices to save time and *more information*. Might this memory storage be where unconscious and consciousness playgrounds begin and interact? The power in a monopole would massively expand basic semiconductors range of abilities to coordinate complex tasks using different parts the electromagnetic spectrum that today we cannot control. Sound a lot like what life’s semiconductors inside of the cell can already do, does it not?

There is a quantum story here between my words, and buried in this picture above, tied to DeBroglie, Onsager, and Feynman’s work: One of the big misconceptions about ocean waves is that we have the precept or belief that they’re generated by water coming towards us, but they’re actually caused by the circular motion of water molecules. Don’t believe it? This gif above shows how particles that participate just in a circular motion is capable of producing waveforms. All waves can carry information and energy. This picture is what a Rayleigh Benard convection cell creates in your eye between the photoreceptor and the RPE to transmit data. Light travels to us with a circular motion because of its orthogonal relationship of the electric and magnetic fields to one another. All proteins have a chirality that interacts with the circular motion of light. For example, DNA has a helical form as does collagen. Circular motion occurs in the leaves

of plants adjacent to chlorophyll and in our porphyrins in RBC's. **These Rayleigh Benard cells require sunlight and gravity to act in unison to cause them to appear.** If gravity or light are absent they cannot occur. Reality, time, and my blog ideas are really all about what has contained in this gif above. It also explains the unusual effects astronauts experience in space where gravity is small to absent but the electric and magnetic forces are large and not as they appear on Earth.



Somatic cells are kamikaze's for support of the germline and melatonin is their General. Leptin protects that cell line by making sure it has light and electrons to maintain

its existence. Somatic cell death requires the creation of a biologic timing mechanism locally, hence why every somatic cell has a clock gene in front of it.

By this logic, we can say everything is *“waving”* at some level when it spins in a circular motion and that monopoles are capable of organizing this waveform of energy in some unique way to allow us to control time to coordinate energy flows.

Cells do this using topology to organize the chaos of the environment. It appears the power density of alien nnEMF can destroy the topology of cells. I’ve predicted many times 5G networks will be man’s tipping point for topologic destruction of cellular organization. This hints there is a hidden quantum thermodynamics at play that does something unusual we do not observe. It appears we cannot observe it because of the Zeno effect.

Remember energy normally flows from hot to cold in the universe, but there is no universal law stating why this is so. That isn’t 100% accurate because in life, during sleep the process is reversed. In the dark, as we cool melatonin rises and sleep occurs. This breaks “classical thermodynamic” tenets of physics. All quantum particles continuously move.

Therefore, everything is *“wavy”* because everything is quantized, even if we don’t understand it all yet. We have to expect it to occur because all of the matter we observe is made of atoms and subatomic particles. It turns out, waves are what made DeBroglie famous, and made Einstein a bit nervous.

The ***gif above*** illustrates clearly how a two-dimensional surface can be created in a 3 D world. Might that be what our brain does by resolving waveforms from our environment? To create a wave, using the above picture, it appears we only need a motion in 2 dimensions and not three. **Light can be polarized by a single plane of water in the same fashion.**

Polarized light can be bent using the Faraday effect. This

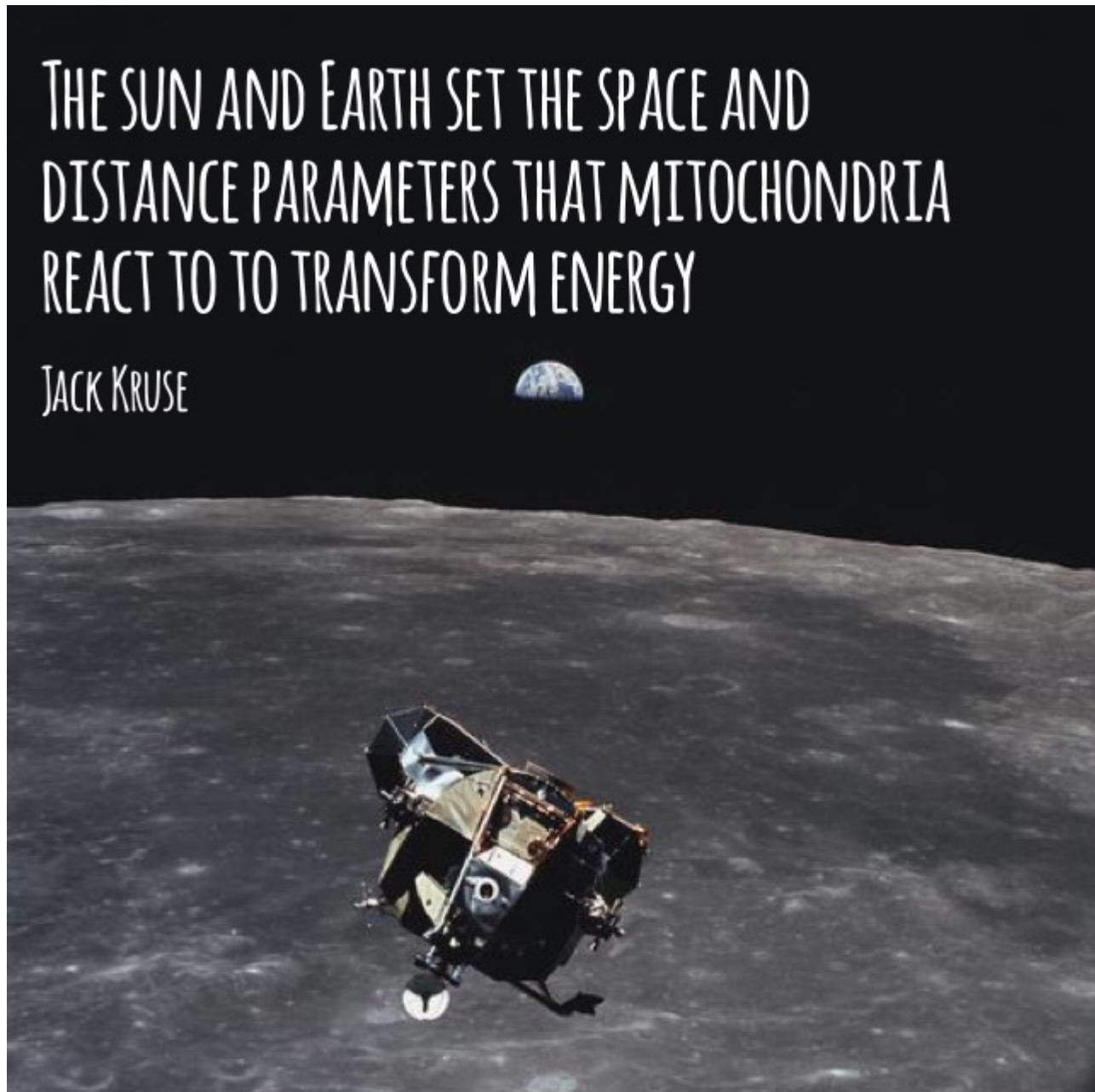
effect is an optical magnetic nonlinear effect of light. DeBroglie was hinting at this wave mechanics of all matter in his Ph.D. thesis, for which he later won the Nobel Prize. The problem for physics back then, was Bohr's version of quantum mechanics largely ignores DeBroglie's work. I think that was a mistake, and it belies why monopoles have been harder for us to find in nature. I have a sense of the 2016 Nobel Prize things may change. That Copenhagen mistake might be why we have not found monopoles naturally. Today, we have found them in the lab transiently in "spin ice" and graphene. Naturally occurring magnetic monopoles, actually may be found on many surfaces inside of topologic insulators as a 2-D version of matter, that acts in the third dimension only when sunlight hits it. I've got a deep sense this is true in mitochondria and the cell membranes that link to it.

The Faraday effect generates massive magnetic fields. Why am I so interested in this effect is because I think it may be the basis of why mitochondria can be organelles in a cell that harbor and hide ***transient magnetic monopole formation in cells***. The Faraday effect is an optical magnetic effect that occurs in most optically transparent dielectric materials.

You can see it if you get a piece of calcite. It also occurs in liquid crystals like water. Normal tap water has a dielectric constant of 78 but EZ water inside a cell has a dielectric constant of 160. During the daytime when the sun is out cells are made transparent by UV light exposure and the presence of the DC electric current in cells. For the Faraday effect's magnetic/optical properties to manifest a local magnetic field must influence the crystal or liquid crystal dielectric under the influence of this magnetic field.

Sunlight does this to water in cells. It excludes protons and it changes water's magnetic moment because not all protons have the same spin. The Faraday effect causes a rotation of the plane of polarization within a media/tissue which is linearly proportional to the component of the magnetic field in the direction of propagation. Today we know that K^+ ions can

polarize light in cells to make them birefringent under a polarized light microscope.



Another reason I am so interested in this recent finding is that the Faraday effect is used in spintronics for topologic insulator research to study the polarization of electron spins in semiconductors. Faraday rotators can be used for amplitude modulation of light, and are the basis of optical isolators and optical circulators; such components are required in optical telecommunications and other laser applications. I believe the Q-cycle, cytochrome 4 and the ATPase are all types of Faraday motors. My members will really perk up with this

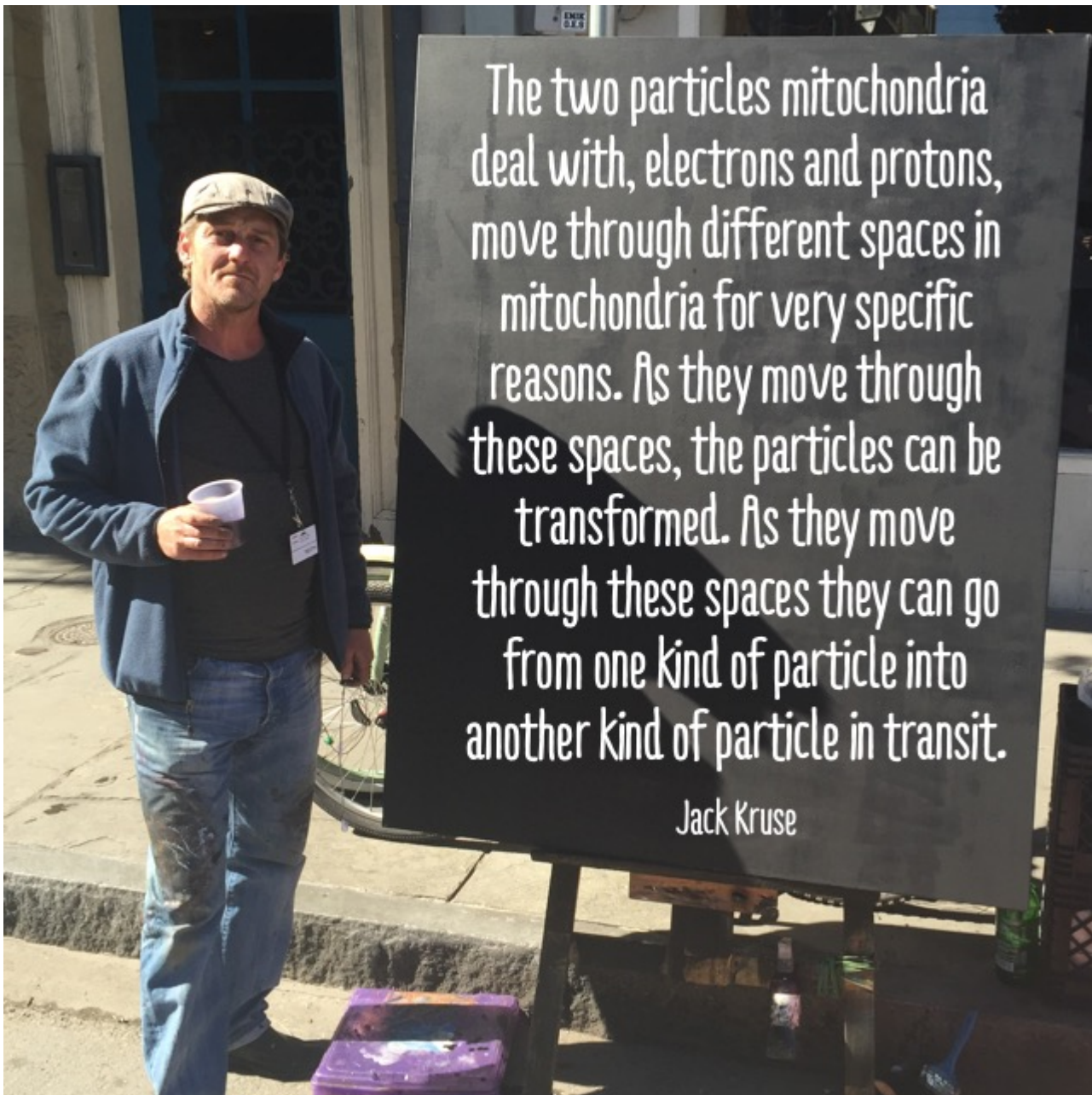
last physical fact because my August 2016 webinar was linked to how cells make lasers from light captured in cells atomic lattice at night time when sunlight is absent. This effect has huge implications for biochemical control using entanglement and how memories are formed and recalled using holography in the EZ crystal of cells.

Why are magnetic monopoles so important to the story of life?

They would help explain how mitochondria cleave energy from protons to make life possible from abiotic atoms. They'd all explain some amazing things about space, time, and the laws of physics. How so?

Consider the following idea: Monopoles would allow us to control particles of all types to do things we cannot currently do using light's nonlinear capabilities. We could harvest the energy of protons quite easily using light stored inside of the atoms of cells. Currently, this is only believed to occur in the sun. What if ordinary things life depends upon could also do this? Today we believe everything in nature is symmetric. Maxwell's original 20 equations are very non symmetric and this has made scientist nervous for a long time. WHY? We observe that every north pole has a south pole. Symmetry makes us think about a mirror and a mirror effect. Light is not symmetric ever because it has a built-in duality. Light is not even relative. It has a constant speed and it only becomes relative to time when it is captured in a medium and slowed down or speed up. This unusual aspect of light is why life innovated around all of light's nonlinear abilities, in my opinion. For example, in a symmetric state, I could take a bunch of electrons and bounce them around off one another. In this universe, if I had mastery of space and time, I could imagine creating a mirror universe, and in that mirror universe, my electron bouncing experiment would look perfectly normal no matter how I looked at it. **Symmetry means or implies that something is unaffected by our perspective.** The same would hold true if I turned all of my electrons into

positrons. If I did that I would be able to reverse the direction of time. We don't observe that in nature but it may be possible in sleep.



Don't you think these monopole abilities would be a game changer for cells?

Light can do these things without a mirror or lens. This is what photonics is all about. Optics is built around linear aspects of light. Photonics is about the nonlinear quantum aspects of light. In fact, nonlinear optics hold more surprises for biology than we care to know. **It is clear that**

all the most interesting problems in physics are now being found hidden in the biophysics of cell biology within mitochondria.

However, the same things mentioned above about symmetry can't be said for a universe where magnetic monopoles are permanent.

I believe that monopoles must be transient because they must be hidden from our power to observe them otherwise they would not work as they can. This is called the Quantum Zeno effect.

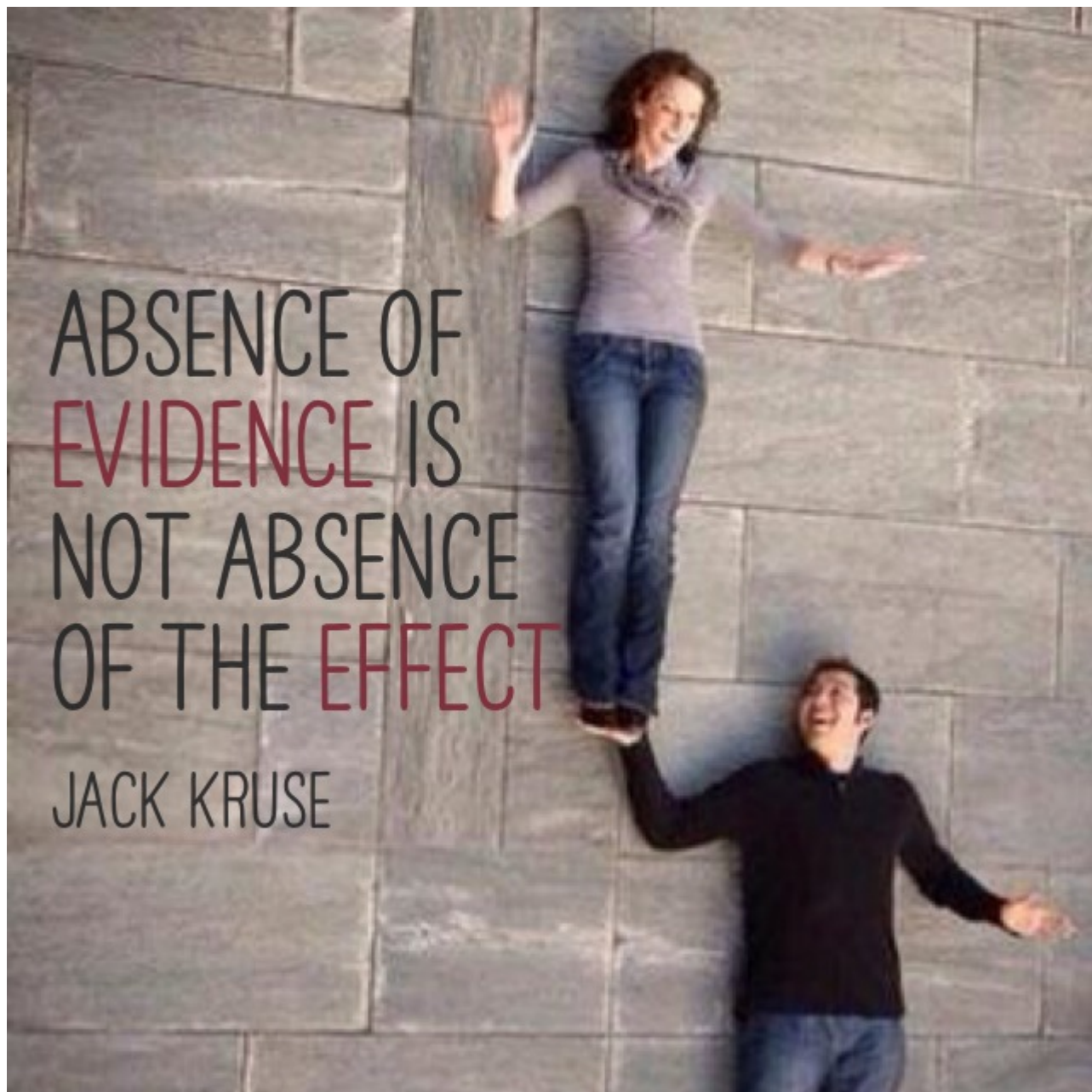
So what if they just are transient manifestations of the organization of the physics of cells? If I throw an electron at a monopole, it spirals in a particular direction. But in the mirror universe, it spirals in the opposite direction. Just because of the electron's spin, in that environment, you could tell that you were in the mirror universe or not!

Might life and sleep be two such universes that operate just because of the quantum spin state of a particle???? Might a monopole allow us to enter that unconscious and conscious realm as it transiently appears? Electromagnetism isn't supposed to work this way, but we say this, only understanding that we observe how it operates when we are conscious and not when we are unconscious in REM sleep. Inside of our cells at the smallest scales, some other elastic property of matter might control the perpetual motion of our atoms to increase time by keeping our cells far from equilibrium because it is mandated by the queer laws of quantum mechanics. We have the math that fully explains QED in our observed world, but we do not know if the rules are the same in cells engaged in the quantum state of sleep. **In fact, except for the weak force, the laws of physics aren't supposed to concern themselves about either the direction of time, or whether we're in a mirror universe.** The existence of monopoles would tell us so much more about the true symmetries of our universe, if we could find them. Have we found them yet?

ELUSIVE TRUTH

Scientist are people who require "seeing is believing" to

understand truths, when things are really occurring in the invisible realm below our sensory capabilities. The irony is that they all know the Quantum Zeno effect is real. Sometimes what we cannot observe is done for a specific purpose of extending possibilities and probabilities. The truest things to most human scientific minds are things we only observe in nature. What happens if what we are looking for is below our ability to measure or find it, by design? Just because we cannot observe it does not mean it cannot exist, correct? Just because we cannot resolve this level of interaction, in the way in which our experiments are created, does not mean the effect cannot occur. We may not have uncovered this ability as yet as a species. I have a sense the 5G world will uncover this aspect of life by causing massive epidemics of disease. And if this is true, we should expect to miss the proof of its existence in this case. Could this be the case with magnetic monopoles? **The absence of evidence, in this case, is not the absence of effect.**



We know surface topologic insulators (TI's) have magnetic monopole abilities today. The gif above ticks your eyes. It points out that your eyes are built to miss some effects to keep them hidden from your reality. Ask yourself why nature would do this? The gif clearly shows us how the "human eye camera" sense is quite limiting to what really is occurring.

It also points out how our "third-eye sense", called intuition, is needed to visualize concepts like the picture is painting for our brain. This explains why people miss the concepts on nEMF wave effects on biologic systems. I really wish our eyes had the ability to see those nEMF waveforms, because everyone would call it out for what it is: artificial

light pollution that ruins our discriminatory ability built into our senses and ruins mitochondrial function because it destroys topology of living systems. It derides our 5 senses of their sensitivity and specificity. Without them, we cannot recreate the world we live in accurately. We lose the ability to control the flow of information to our cells from our environment. ***We essentially become blind to reality.***

The Faraday effect was the first observation that electricity, magnetism, and light were unified. Before electricity and magnetism were unified by Maxwell and Faraday, physics was described by what we call a "Grand Unified Theory," or GUT.

Today there's no consensus on what the true GUT is for life. But all GUT's have some qualities in common, and these include so-called phase transitions. When we talk phase transitions, you have to mention ice, as an example, because of ice transitions from liquid to solid. Take water and freeze it, and you get ice. If you observe the process close enough, you'll notice, though, that within a small patch of ice that forms first, the crystals align with one another. However, if you freeze entire lake parts of the lake that are far enough apart don't align at all. This makes the surface of the ice nonhomogenous. We can see this effect in ice when we consider how isotopic fractions effect the freezing and thawing of water.

The electric and magnetic fields in the universe behaved exactly the same way, and these regions where the phases of the fields don't line up are known as "topological defects." ***For GUTs, the topological defects in these fields are where magnetic monopoles hide, in my opinion.***

MAGNETIC MONOPOLES

They are the loners in the entire physics universe because the math says they must exist but very few believe they really exist because we have not found one yet. Dirac was the last physicist to talk smartly about them in my opinion. Feynman

idolized Dirac. *Monopoles explain why you can't slice an electron in half.* Since light chases electrons in the photoelectric effect interactions and not any other particle, this becomes important. **One of the big mysteries of the universe is why electrons and quarks** (the major players in the particle physics universe that make up protons and neutrons) **only come with particular charges, and that the ratios of those charges are such nice round numbers.** 3 quarks make a proton (H^+), in case you did not know this. An electron has 3 times the charge of a down quark, for example, and a up quark has -2 times the charge of a down. Paul Dirac tackled this "charge problem" in the 1930's and this is when he warned physics not to shrink Maxwell's equations to 4.

He was a physicist's physicist like Feynman; a complete math whiz. Both of them can best be described as being the first two human calculators before any computer was ever invented to do the math. He was one of those scientists who could basically take a mess of equations and come up with a mathematical certainty which turned out to tell us something amazing about the universe. If I told you how he went about predicting the existence of anti-matter using math alone, you would think I was completely nuts, but damned if he wasn't 100% correct. He predicted the presence of an anti-particle of the electron, called a positron. A few years after he made this prediction, the experimental proof showed he was right!

This is why I still pay homage to his admonition that we should not dismiss the existence of monopoles in nature. I think physics has not found them because they don't realize they are transient and not permanent. The physics of the environment has to be organized in order for them to show up.

When the environment disrupts the formation, the energy flows slow or stop and things change in atoms. This sounds very similar to what Dr. Doug Wallace has explained in mitochondrial biology, in my view.

In contrast to their electrical counterparts, isolated magnetic monopole charges are not readily observed in nature, and this is why physics has shrunk Maxwell's equations to just 4. Despite much experimental effort invested in their search, magnetic poles always seem to come in pairs, with a north and south pole of opposite polarity, leaving no net magnetic charge behind.

Dirac's math predicted something unusual and disturbing about monopoles. If monopoles are to be found in nature, they **should be ridiculously easy to detect because they would have to be massive and have large electric and magnetic charges.**

Why this is so, is based upon complicated math, so I will leave that out for now because it is really not that important to this blog entry. Because of Dirac's math, I believe that artificial monopoles will likely be found with superconducting devices called SQUID's. I have a sense they are tied to the magnetic moments of tissues. I believe the magnetic moments of tissue are linked to their metabolic rates and how effective energy can be generated in the mitochondrial matrix.

Inside the matrix, the magnetic moment can vary massively because of the quantum spin state of electrons and protons there. Today, in medicine we use SQUID's to see MEG data in people.

If physics or biology can generate and use monopoles *transiently or artificially*, it would give cells the ability to expand the number of ways nature could manipulate electromagnetic waves. Monopoles would be able to control things thought to be uncontrollable, like neutrinos.

Neutrinos are similar to the more familiar electron, with one crucial difference: neutrinos do not carry an electric charge. Because neutrinos are electrically neutral, they are believed to not be affected by the electromagnetic forces which act on electrons. There is some recent data that this may not always be true. Neutrinos are affected only by a "weak" sub-atomic force of much shorter range than electromagnetism and are

therefore able to pass through great distances in matter without being affected by it. This makes them the most common fundamental particle in nature and the most uncontrollable. Since neutrinos have a very small mass, they also interact gravitationally with other particles with mass, but gravity is by far the weakest of the four known forces.

At small or short distances gravitation has little to no effect on the small mass of neutrinos. **Neutrinos are normally released in proton-proton nuclear interactions.** This is why the sun is believed to release massive quantities of neutrinos.

The discovery of monopoles would allow for a way to control and liberate neutrinos. This ability would be seen in transient monopoles as well. Electric charges dissipate, leak, and flow normally in circuits. Magnetic monopole charges would be quite stable upon contact with something like a neutrino, to generate energy constantly for little to no cost thermodynamically. Transient monopoles would make it elusive to find them with today's technology. This may explain why Dirac said monopoles should be easy to detect. Maybe the sun and mitochondria are them, and they have been right under our nose but we do not have the resolving power to understand them yet. Might the Nobel Prize of 2016 change that? I hope so and I think so.

Neutrinos could be used to harvest the energy buried in a proton, if a monopole controlled its path, it could be used like a surgeon controls a knife through tissue. Two other abilities monopoles would give nature are the *creation of a perfect DC transformer that would not require superconductors to operate.* They also would create the ability to create some huge magnetic fields in very confined spaces. I am thinking about confined spaces like cells, microtubules, and in mitochondria. Cells happen to use a DC current when sunlight is present, and MEG data shows humans do generate massive magnetic fields in the brain and heart without the presence of

any superconductors like liquid helium. Kinda of an interesting coincidence, huh? So is there any proof that this stuff could be going on?

On Valentine's day in 1982, a natural monopole was seen one time, but it could not be reconfirmed. It was reported on in Nature magazine.

Here is the verbatim account:

"In the 1970s, there were searches going on for monopoles, and the most famous one was led by a physicist named Blas Cabrera. He took a long wire and made eight loops out of it, designed to measure magnetic flux through it. If a monopole passed through it, he would get a signal of exactly eight magnetons. But if a standard dipole magnet passed through it, he'd get a signal of +8 followed immediately by one of -8, so he could tell these apart.

So he built this device and waited. Occasionally he'd get one or two magnetons, but the fact that it wasn't eight was hardcore evidence that something funny was going on with just one or two loops. (Three or more was never seen.) In February of 1982, he didn't come in on Valentine's day. When he came back to the office, he surprisingly found that the computer and the device had recorded exactly eight magnetons on February 14th, 1982. Huge devices with larger surface areas and more loops were built, but despite extensive searching, another monopole was never seen." Stephen Weinberg even wrote Blas Cabrera a poem on February 14th, 1983:

Roses are red,
Violets are blue,
It's time for monopole
Number TWO!

"And, as of today, no one has seen "good evidence" for a second "natural magnetic monopole", leading us to believe that the first one was spurious." **END OF ACCOUNT**

Spurious or maybe hidden is a better way to describe this in my view, because maybe we have not been clever enough yet to create an experimental design to see the effect? I believe something happened that February 14th in the sun or in the protons quantum spin state in those wires to cause the effect.

I think you can guess my answer based on the spin ice and topologic insulators state that day. We now have a lot of experimental evidence they do in fact exist, just not in the state we expected. **Electrons are tricky particles because they have spin. Protons have a spin state too. Spin creates motion. Look at the gif above again.** Each small dark dot is spinning is it not? Are they creating a wave-like pattern in the 3rd dimension of this screen? Yep. *It turns out neutrinos spin too, but they only spin in one direction just like the gif does.* They are all left-handed in their spin so this means they only would create a 2-D wave in a special way.

This means their oscillation in a medium might have a distinctive pattern that would be useful to mitochondria.

Neutrinos interact primarily through the weak force.

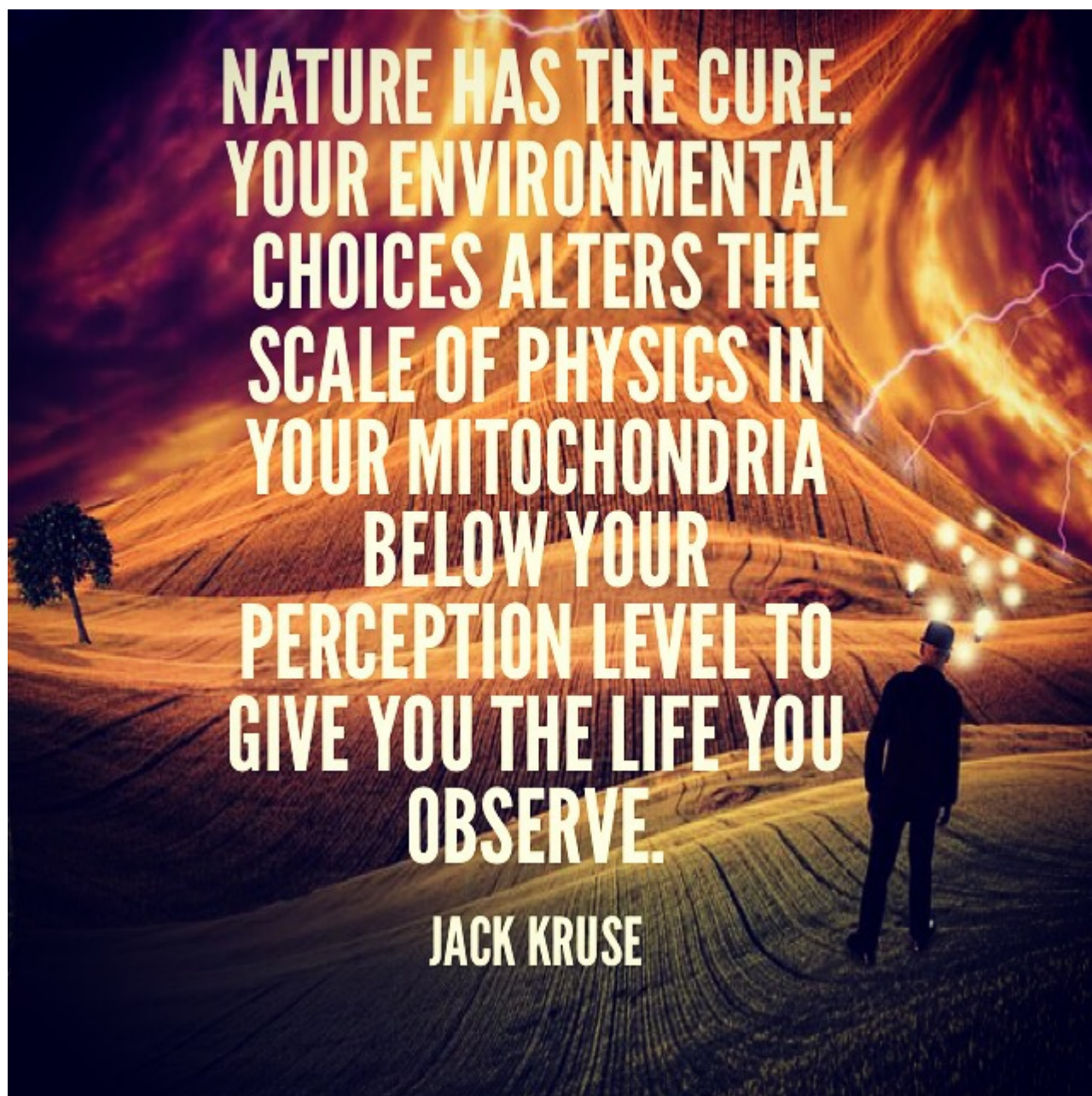
To understand electrons well you have to understand something called the "quantum spin Hall effect". *This is a very unusual state of matter where the spin of an electron is solely determined by its direction of motion.* **Look at the gif again.**

All the dark dots are moving the same way, aren't they? Neutrinos spin in the same direction too. You can visualize it by thinking of a graceful dance from the past, where couples moving counterclockwise around a room also spin counterclockwise, and vice-versa with couples moving clockwise. If this happened on the surface of a real material, *say like a carbon superconductor (skin),* the current could flow *without causing the material to heat up.* Without heat production, time stands still. This is now known to happen in graphene by experiment. I know it happens in every one of my carbon-based patients too because collagen and graphene are polymers of carbon.

This kind of heat is what causes transistors on semiconductors to heat up and break down the physics of Moore's Law. *If a surface generates no heat when electrons are moving, this type of material would give rise to a magnetic monopole on its surface.* Doesn't mitochondria release heat to the MINOS that is made up of water during wakefulness? Does it do the same at night? Isn't water the ideal chromophore for heat or red light? Isn't that heat subsequently absorbed into cell water this form of light instantaneously to make an EZ? Remember all forms of light travel at 186,000 mph in a vacuum. Is this true when matter changes its optical density? Could this be how mitochondria or components of mitochondria (Q-cycle) becomes a transient natural monopole? Isn't water the most common chemical in a cell. Isn't collagen the most common protein in all animals?

Dirac said in his paper that a monopole would be easy to spot because it would have a large magnetic moment. This is when I realized why water was critical to life. It is made up of two parts hydrogen which is known to have the largest variability of magnetic moments with respect to its isoforms present in the water on this planet. Water and collagen working together fit both of Dirac's requirements for a monopole. Remember that the mitochondrial matrix is also filled with H^+ that acts like a metal because its electron has been stripped from it. Seawater is not just filled with H^+ . Neither is cell water. The mitochondrial matrix seems to be a small tight area that somehow separates positive and negative charges in some unique way that occurs way below our ability to recognize why the effect matters. *Mind you, the mitochondria would not be capable of creating a monopole itself, it would need help from its friends, water, and light to do the job transiently.* I believe day and night is that stimulus. The mitochondria would, however, give the cell a *surface effect* that simulates what a topologic insulator is capable of. It has been known for 50 years that the cristae

of the mitochondria are flat. So that condition Dirac set for a monopole is also met. *Not many people know mitochondria are flat 2-D structures.* In some neurons, they can be prism-like in shape and in other neurons they have a whorl-like vortex shape. Their shape seems to be tied to the state we observe them in. The surface of mitochondria is a dual layer cell membrane.



MONOPOLE, NOT MAN IN THE MIRROR?

To understand how a *surface of a material* can act like a magnetic monopole, it helps to examine first how an ordinary

metal acts when a charge, say an electron, is brought close to the surface. Because like charges repel, the electrons at the surface retreat deeper to the interior of the material, leaving the previously neutral surface, positively charged on a relative basis. Sunlight has this effect on the retina, skin, and aero-digestive tract after it interacts with the electrons in those surfaces. Photons interact with electrons specifically photoelectrically. Sunlight is unpolarized. *We can physically change a surface with light rays to induce a magnetic monopole with topological surface state. That surface has to have defects in it to make it occur.*

For the biochemists and biologists out there, you might begin to see why I am adamant in saying and believing that in time it will be shown that what happens at a surface will determine how biochemistry can and will evolve at deeper levels in tissues.

Time, gravity, and monopoles are all likely emergent phenomena in nature whose quantum mechanical nature remains hidden because we cannot measure their interactions well, yet. These things seem to occur because of how matter comes together in specific environments to act in different ways, then we become able to observe it after its collision and our cells are attuned to sense it in some ways we have yet to appreciate.

HOW I SEE IT

So what might happen to a surface, in this case, say, in mitochondria? The resulting electric field on the surface of the cristae might look exactly like that of a particle with the positive charge the same distance below the surface—it's the positive "mirror image" of the electron. In other words, it would be a virtual particle. These things are allowed in quantum mechanics, but not in our observed world. In fact, from an observer's point of view, it's impossible to tell the difference between both the electron or its virtual partner,

the positron. This is an example of the Quantum Zeno effect.

This implies that a biologist looking at a cell or mitochondria would never see this monopole effect. If you cannot observe the effect, how could you design an experiment that might? After all, you can't find what you're not looking for, can you? This might be why a monopole has eluded our detection. **Maybe it exists in a form we don't realize it has been right under our noses?**

Might it be hidden in the way a mitochondrion moves during the day and night? Electrons spin in two directions and neutrino's only spin in one. **Might this be something life could use?** Magnetic monopoles seem to be able to arise in condensed matter systems such as spin ice and graphene and carry an effective magnetic charge as well as being endowed with other typical quasiparticle properties such as an effective mass. They likely are formed through spin flips of electrons and interact through a Coulomb potential.

Maybe what we should be doing in biology today is proposing reasons why a magnetic monopole doesn't exist. After all, that's the whole point of science isn't it? Ideally, science should seek to falsify our hypotheses, shouldn't it? **A hypothesis that can't be falsified isn't scientific.**

The thing about monopoles, is all the QED math we have devised predicts these particles must exist, but we act as if they don't because we have not found them yet.

Today, physics and math are incestuous, so mathematically speaking, physics has already shown they must exist. They only believe monopoles are ghosts because they haven't found any natural ones yet. It's that pesky "physical aspect" of experimental physics that's missing here, or is it? **The recent Nobel prize of 2016 is challenging this idea and that is why I've been sitting on this blog for so long.**

"Spin ice and graphene" are materials that have shown monopole

abilities. Graphenes is a polymer of carbon. *It has a special crystalline structure and it is very thin. Life is also made of carbon polymers we call proteins.* What has been observed in experiments in spin ice and graphene have not satisfied physics yet that they exist. This is not wise in my opinion.

We should keep in mind that physics isn't only math. Today's physics has tried to use math to replace experiments. Feynman and Dirac always wanted their mathematics to explain observations made in nature. This made them both, special scientists. Math is just a tool of physics, by which to model things, but it must be guided by empirical data and experiment.

Today, we now have more evidence of this monopole effect from experiments done on spin ice. [Hyperlink](#)

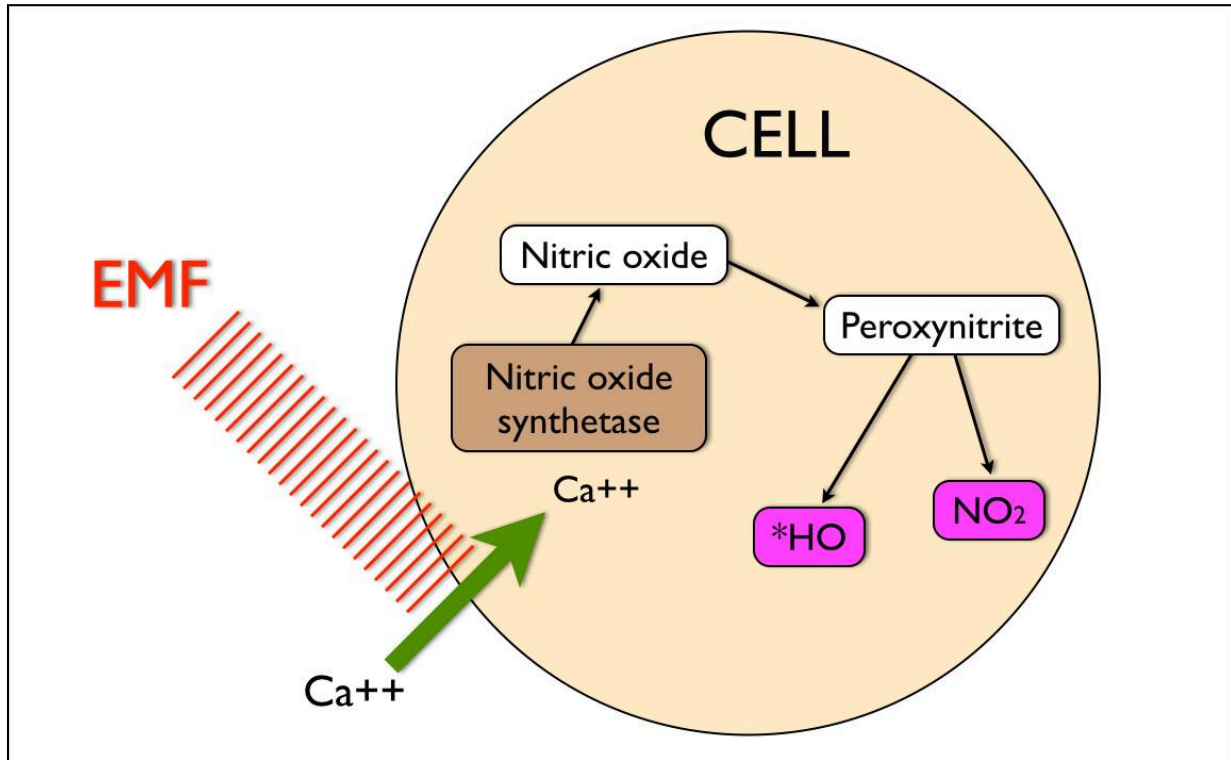
The concept of an *"image charge"* is something undergraduate physics students encounter in their very first electricity and magnetism class. Biology students never get taught this concept. I never was. The physics students are also taught that the magnetic monopole doesn't exist. So it should be no surprise why monopoles are ignored today in research. So you might be asking do monopoles exist today? Yes, they do. We have found them in "spin ice" and in graphene. *The "mirror" alloy is no ordinary material. It's called a topological insulator. This is a queer state of solid or gel in which "the laws of electrodynamics" are dramatically altered.* This means a specific set of environmental variables allows a monopoles to emerge. In fact, if an electron was brought close to the surface of a topological insulator, something truly eerie would happen. *Instead of an ordinary positive charge, experiments have shown we would get what looks like a magnetic monopole in the 'mirror-like surface effect' at deeper levels in the topologic insulator.*

The image charge analogy above is an important feature to

visualize. That is why the gif above is critical to understanding this blog because it is a visual reference of the very same optical effect in a TI. To be clear, there is no physical half a bar magnet lodged somewhere inside this material or inside of our cells. It is a surface feature of things made of matter, and the surfaces of things in our cells like the cristae in mitochondria. *Instead, the monopole's abilities emerge as a point-source magnetic field on the surface of things.* MEG and EEG data have shown us human tissues with mitochondria generate massive magnetic fields, yet when I cut open my patients I can find no obvious monopoles? Might it be that we contain superconducting magnets in our cells that are built of quasiparticles that show up transiently based upon the presence or absence of light or magnetic fields?

My October and November 2016 webinars show you exactly where they are in us. Nature is showing us experimentally in topologic insulator science that we do have them, and we have not conceived of the experiment to bring out the effect in biologic tissue yet. I have a sense the answer is the type of oscillation a mitochondrion makes and the type of resonance this vibration allows. This is why the Time series has a blog to this effect. Consider acoustic phonons. They are a quasiparticle known to exist in us. Recent data from Ohio State has shown us that magnetic fields can control acoustic phonons, and I have a sense this may be another way to contrive experiments to find this effect in mitochondria. Since the Faraday effect can generate massive magnetic fields all by itself we can see that all the needed parts are already present in cells. Our problem is no biologists see this structure because they are physics ignorant. The key to finding these things will be constructing proper experiments to transiently stimulate cells to look for the effect using the proper incident light of nature and not man.

EMF Activation of VGCCs Increases Free Radical Production



WHY KETOSIS MIGHT ONLY BE A HALF TRUTH

The signature, a defining characteristic, of a magnetic monopole emerges only from the behavior of the electrons inside the surface of the material. This is today's belief, but I have a sense that the same thing may be true of protons in a substance that is alive. *This implies a lack of electron flow in ECT would lower the magnetic monopole presence, and this may be why ketosis can help, but not reverse diseases tied to mitochondrial heteroplasmy.*

In the lattice of a typical metal (H^+), electrons feel the push and pull of surrounding charges as they move through it. The mitochondrial matrix is a gel of liquid hydrogen protons with their electrons stripped away by the massive electric charges in the membranes of mitochondria. As a result, moving electrons behave as if they have a different mass from their less mobile partners fixed into an atomic lattice. *When electrons move through graphene, however, they act as if their mass is zero. This is exactly opposite of what the valence*

electrons in gold and mercury sense on Earth. This behavior makes them look more like neutrinos streaking through space near the speed of light. That last statement should make anyone who listened to my December 2015 webinar stop in their tracks. Can magnetic monopoles somehow control neutrinos? Neutrinos today are believed to be uncontrollable by physics. I believe the presence and absence of a monopole might be the only thing that can control them for cells, in my opinion.

At such "relativistic" speeds, particles don't follow the usual rules of quantum mechanics. This means that as speed changes, mass and energy really change more than we would think. This is why gold is a gold color and why mercury is a liquid. Nothing would make us expect this on the periodic table until we examine the quantum effects of their nucleus on their valence electrons. This change in behavior comes from things we do not expect. This is the essence of a nonlinear system. If you do not understand the physics of how an organism is built you'll never see the effect. We know as things in nature approach the speed of light it must gain mass because of the laws of physics. Mass and energy are equivalent according to $E=mc^2$. This is why light photons have no mass and it explains why cells have evolved to use light to do the things they can. Neutrinos are the smallest particles in light's spectrum that have a very tiny mass, and they travel very close to the speed limit of light. Speed affects mass and energy in ways most biologists do not account for. *As speed increases, matter has to become more like light, yet it appears to gain mass, and this causes it to act more particle-like and less wave-like. It appears things change at or near the speed of light because light loses all its mass.* At these relativistic speeds, instead, physicists must invoke the mathematical language of quantum electrodynamics, which combines quantum mechanics with Albert Einstein's relativity theory. Neither language works with one another well.

CONTROLLING THE
MOVEMENT OF THE REACTION
PARAMETERS SO THEY CAN
ENTANGLE, WHILE
CONTROLLING THE ENERGY
FLOW ENABLES CHEMICAL
BONDING. THIS ONLY
OCCURS IN THE TRANSITION
ZONE BETWEEN **ULTRAVIOLET**
AND **INFRARED**, AND MIGHT
BE THE REASON WHY WE ARE
ABLE TO SEE THE RAINBOW
WITH OUR EYES BECAUSE THIS
IS THE REGION OF INTEREST.

JACK KRUSE

Even though electrons course through graphene at only 1/300 the speed of neutrinos in today's labs, physicists realized several years ago that the novel material might provide a test bed for studying relativistic physics in the lab. It also means that these "monopole like surface effects" could harness power like a neutrino carries to harvest the energy in protons in the mitochondria matrix or in the iron-sulfur complexes in the mouth of cytochromes.

Finding monopoles would be the magnetic equivalent of electrically charged particles, and there are several reasons physicists would like to see them. This is where Dirac comes

back to our story. In 1931, Dirac argued that the existence of monopoles would explain the quantization of electric charge: the fact that every electron has exactly the same charge and exactly the opposite charge of every proton, even though the electron has only $1/1836$ the mass of the proton. In the 1980's, theorists found that the existence of monopoles is a basic prediction of "grand unified theories," which assume that three forces—the electromagnetic, the strong force that binds the nucleus, and the weak force that causes a type of radioactive decay—are all different aspects of a single force that emerge when the environment is tuned differently than it is now. That idea is fundamental to how life organizes, in my humble opinion. It means time, gravity, and monopoles may all emerge as different aspects of this single force of nature.

SUMMARY

Health is merely the slowest form of death we create in our mitochondria.

You don't build a business in my world. You build people up first. They might not understand how you do what you do, but that is immaterial to success. Those people will build the change you seek because they will become facile using the tools you give them. Your job is not to tell them how to do it, your job is to show them why they must do it. Maybe, if you're lucky, those people can you help build a business with you to help others. You must get your mission correct before your business will fly. My mission is to help you, help yourself today, to understand that monopoles are likely buried in the surfaces of many quantum dots we call topologic insulators. Who are you good for if you are not good enough for yourself? The Nobel Prize in physics was just given in 2016 for this science in this blog. I doubt you'll find anyone else out there who can explain the practical importance of this science to biology. It is time you realize why this

quantum leap in knowledge is huge for our species.

Someday, I envision building devices in imperfect black box radiators to assist our natural topologic insulators to give us more time on Earth. I believe we can build tangible things like this, using quantum principles, to help humans overcome their modern environments. TI's use several key aspects the subatomic world on their surface design to control light and temperature to condense our respiratory proteins in mitochondria to give us more time by increasing the ledge of the second law of thermodynamics built into our respiratory proteins. The ultimate goal I have for you is always the same: I want you to keep your eye clock from aging faster the clocks below, by improving our ability to oxygenate and sleep well to regenerate. The quantum processes that control these things are what I am obsessed with. This makes me a metronome more than a surgeon.

The conversation is always crazy deep between my team of misfits in New Orleans. After all, we are trying to change the world. We are all created for uniqueness and we are quantum beings living in a synthetic world. We all learn, as we get older, that rules are made to be broken. I break them, and today, I invite you to begin in your own way. There is no one way to change the world, there are many. Be bold enough to live life on your terms, and never, ever apologize for it. Go against the grain, refuse to conform, take the road less traveled instead of the well-beaten path. Laugh in the face of adversity, and leap before you look. Dance as though all are watching. March to the beat of your own drummer. And stubbornly refuse to fit in. Be like Dirac, Curie, and Feynman, and insist that we not give up on monopoles or neutrinos for their roles in creating the opportunity for life. *I raise my glass to those of you to enjoy being a provocateur because that is as good as good gets to flourish in this RF/microwaved world filled with the alien man-made light of blue at night.*



The Quantum Misfits

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