Cold Thermogenesis 1: Theory To Practice Begins

Readers Summary

1. How do we perceive environmental change?
2. Does evolution use climate as the currency for epigenetics?
3. Does the functional organization of the brain tie quantum mechanic theory to Biology?
4. How might astrophysics give us the insight we do not currently consider?
5. If the brain undergoes neuroplastic change does it follow that Biochemistry uses thermoplastic change?

Today, we are going to bend your mind a bit by explaining to you many of the things you might be believed as biologic truths published in biochemistry books today are in fact truths when certain environmental truths are held within a constant range. Yet, they change tremendously when certain factors are altered. Often the biophysical changes do not even have to affect the thermal coefficients of the biochemistry in the hypothalamus. Just the perception of the environmental change from the brain is enough to alter the chemistry as is the enzyme and proteins existed on the top of Mount Everest or on the ocean floor in the coldest environments on earth. When biochemistry was observed in living cells and described, the scientists rarely considered these effects on our biochemistry and how it may alter the cellular terroir. Our hypothalamus rewires too many stimuli, and it appears that temperature is a major factor in the rewiring protocol of our brain. Evolution has clearly needed to use this in the past for some reason. Our job as inquiring bio-hackers, is to figure out why and how this might have happened.

In essence, they looked at the complex biologic machinery from a standard Newtonian platform. Most scientists know that Newtonian physics explain much of what we observe in the physical sciences here on earth, and that quantum mechanics best describes the physics of subatomic matter of matter in space on a universal scale using mathematics. When QM theory is adapted to many biologic systems we must invoke quantum electrodynamic theory because some puzzling things emerge that are hard to explain. Complicating matters, we have few ways to measure the quantum effects within biologic systems to test how they may affect living cells but we cannot measure several aspects of things at once because we are dealing with subatomic particles. This does not imply in any way that quantum mechanics does not apply to biologic systems because it clearly does. Many believe these effects are often buried in the biochemistry equations that biochemists use to describe how living cells make order from the complete chaos that rules matter. I do not. This implies the effects might be difficult to discern or measure with current techniques we have, and this is why we have yet to uncover them in biologic systems. It means we need to ask better questions in our biohacks and experiments to uncover these effects. The brain clearly uses QED to operate optically to affect our protein polymers that act as condensed matter. This is a controversial point at all in the scientific world.

When biochemistry laws and equations were laid down in human history, it occurred in a time where our understanding of the nervous system was rudimentary and felt to be static and unchanging. The current laws of biochemistry have never been able to explain how the human brain functions totally on a biochemical level or a functional level. Moreover, we have yet to hear a complete thesis on how it is able to perform all the things it is capable of even today. Biochemists still cannot explain the biochemical fluxes that control some of the most basic functions in a cell. We still have no idea how sleep occurs, how ECT transport occurs, why anesthesia works,

or how the brain wakes us up every day. We understand many parts of it, but we do not understand the biochemical processes of the nano-machinery in our cells, and how the make order of the chaos of the matter in our cells. The belief that the brain was static remained medical and scientific dogma until the last 15 to 20 years of modern science. When brain researchers began to unlock new mechanisms of neuroplasticity and brain circuitry, everything changed for us in the neural sciences.

When it dawned on us that the brain could rewire on its own and it was proven in humans, we had no biochemistry to tell us how it all worked. In fact, we still do not. Here is where some very smart biochemists and physicists began to collaborate together and share ideas of how biology may be impacted by quantum mechanics to explain "queer reactions" in biologic systems where modern biochemistry theory just stops. The organisms that sparked these theoretical experiments were extremophile organisms that live deep in the sea in the coldest darkest environments possible, and thermophiles that also live near boiling vents or deep in cenotes in scalding hot sulfuric acid. How can life exist in these wildly diverse environments is no longer just a biologic question, it is a

question for biophysics these days. It has brought many bio-astrophysicist to the same table to solve the mystery. Today, most of these bio-astrophysicists think that the best chance for extraterrestrial life may lie on the moon of Titan. Titan is a moon of Saturn and is a giant frozen ocean that has volcanic jet streams erupting from its surface in radiant displays of light that have been seen by the Hubble telescope and by the Cassini spacecraft. These enigmas maybe solved when we first relook at how the human brain rewires to environmental pressures that climatic change brings to bear upon it. Neuroscience has taught us over the last 25 years the neuroplasticity in the nervous system is ubiquitous. Explaining the functioning of the human brain comes in to play because it remains the one human organ whose function continually stumps modern science but readily adapts its own biochemistry. What are the links that here that we might consider important?

How might we experiments reconcile these issues?

The key to understanding these perplexing questions and paradoxical reactions requires us to rule out the impossible first. This implication **is not** meant to mean that the laws of biochemistry or organic chemistry are wrong. Quite the contrary, it means that humans today remain in the dark of how biochemistry reacts at extremes of our environment occur because we have not faced them in the past. Because they are rare from an evolutionary context, we rarely study them in current human studies. This includes super hot, super cold, and nonnative electromagnetic energies in our environment. With extremes, what we believe to be true today in printed textbooks may just be mere folly, because all of the pathways were studied in climates that we consider normal. Moreover, the way in which we studied the cells might affect the outcome of our studies. The research on evolutionary biochemistry

today is in its infancy, but few people seem to realize this. Most people believe that basic metabolic pathways are well known and well understood by humans. I do not believe that is true. Hyperlink.

With that all being said, if the brain is capable of rewiring, this implies that the cells it is made from, the nano quantum-machines within those cells, the proteins and enzymes they are made from, the space-time windows they exist in, and the atomic and subatomic particles they are all made from must also have the inherent capabilities to be "plastic" as well.

Einstein hypothesized this early in the 20th century and so far to date, no theory that has been mathematically proven by quantum mechanics has been experimentally proven to be false. Does it also have issues? Yes, it does. But so far on an experimental basis, the results imply the theory is pretty solid. Science is never true or false. It is a culture of doubt that is designed to be metastable as our knowledge advances. Assuming Einstein was correct, we must conceptualize what it may mean for biologic nano-machines in our cells.

It appears biology is beginning to find out why these new founded ideas and realities may hold for us a new world of possibilities and realities with regard to the biochemistry of life in general.

1. Radical new truth number one: If our brain can rewire, then Einstein's theories predict our biochemistry might too using biophysics under the power of cold. It may work via compliant design mechanisms by the movement of subatomic particles like electrons. The movement of electrons or the activation by photons would not be reflected in a biochemical equation. But the effect is real. Consider how rhodopsin bonds are rotated by light in our eye. It does not change stoichiometry, therefore, anything in classic biochemistry experiments will find it unless we are looking for it. This implies we need to

redesign experiments looking for these possible effects. Many of the things believed to be anchored and already well accepted may not be correct.

Mind you, when I use the word rewire I am not saying this in the literal sense. I am saying it is **thermoplastic and subject to the energies in our modern environment.** I am telling you that even today the laws of chemistry exhibit some unusual properties at extremes and that the laws of evolution seem to have used this in our past for adaptation for and natural selection to allow all life a chance to thrive in the natural extreme conditions on earth. For example, Kirchhoff's law of thermal emissions from our sun has come under fire. Sunlight powers all kingdoms of life so any change to how we view its light and emissions has massive implications for biology. Physics and chemistry now have to grapple with the ideas that the gravitational constant and radioactive decay rates are also variable. These all have huge implications for our current beliefs. We have a model for this today in our own solar system that has transfixed modern bio-astrophysicists for the last few years because of the possibilities it holds for us and for the universe.

2. Radical new truth number two: Considering that 90{a7b724a0454d92c70890dedf5ec22a026af4df067c7b55aa6009b4d34d5da3c6} of the earth's current biome lives in extreme conditions on our own planet still, we might need to consider that what we think is "our normal environment" is not so normal for most of life on our planet or our evolutionary history. Life on Earth evolved in an environment much like we see on Titan today; in a deep ocean frozen solid at its surface with the capability of life buried deep within it. The only escape was due to ejectants of water vapor from superheated water from underwater volcanos. Does water acts the same when it is cold and hot? We know that water is a repository for electromagnetic energies from the sun. How might this change our experiments? All these things are

present today in Earth's crust too. There is one major difference now between the two. We believe we exist in a warmer environment today than life began 3.8 billion years ago. There are others, but when one looks at Titan, we see a frozen giant moon with a monstrous ocean beneath it.

All life on our planet came from the oceans first. This does not seem controversial. It points out that water-protein interactions would be quite important to understand in these extreme environments. What happened then might be radically different than we see today. Our current models have not controlled for these changes. Protein and water chemistry has been a constant so one would assume that they would also be highly adaptable and compliant with changes. If you read a biochemistry book that is rarely mentioned. Gilbert Ling found in frogs that insulin does not work the same below 62 degrees as it does above 62 degrees. And because of this, maybe we should consider studying extremophile forms of life here on earth. We seem to believe that how pathways work in a biochemistry book is how life uses it in all environments. I think this is deeply faulty thinking. This might explain the complexities of how biochemistry allows for life to exist at all in a thermoplastic environment. Based on what is in our textbooks today, understanding how life lives in 25,000 feet of freezing water is unknown. Moreover, on those geothermal vents, we have bacteria that live in 750-degree water that cannot boil because of the pressure and cold of the water, causing us to wonder how life manages this perplexing set of circumstances. What the bio-astrophysics found on Titan with the Cassini Solstice mission, maybe a huge clue that life first adapted to extreme environments, and then was naturally selected and adapted to a cyclic warming trend on our planet's crust over time.

Our species may have adapted during this warming trend, but the DNA we inherited came from animals that were predominantly cold adapted. Evolution uses epigenetics to determine

adaptation to environments. Epigenetics is changed by the environment we live in. Today, epigenetic research since 2003, have discarded the strict definition of genetic determinism in evolution. We know today that the power of epigenetics dictates a lot more about newer generation's adaptations than we even knew ten years ago. The implications of this information now have to make us look at some of our own long-standing assumptions about how living cells work in cold and warm environments to see how our cells react to a thermoplastic environment.

It may be that Titan represents today where the Earth was 3-4 billion years ago and offers us an opportunity to gain some insights on how life starts in extreme environments and how it slowly changes as the environment changes. Evolutionary pressures are selected for by the environments of our ancestors were exposed to, and not for what we face today. We remain unsure what the power of those epigenetic pressures can exert on our genome. They may not have even made a big impact when hominids evolved 2.5 million years ago because of all geologic accounts, it was still warm. But it remains possible that the impact could be a lot larger than we expect as well. We may not fathom this possibility, but it is clearly in the realm of possibility. The modern science of epigenetics shows that who we came from, and what they faced has a direct biologic effect upon subsequent generations DNA and phenotypes. It is crystal clear today, but the biologic implications remain unexplored in all modern day literature. What is happening on Titan maybe like opening up a black hole back to a reality that used to be our own. The ability to see Earth at life's evolutionary beginning.

Sounds pretty radical, doesn't it? As Dr. Spock said in Star Trek movie, "When you have eliminated the impossible, whatever remains, however improbable, must be the truth, correct?"

This is where the story of Factor X begins.

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