

Using MMWR to explore the transition between life and death

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Millimeter Wave Radiation (MMWR) therapy is upon us and is proving itself to be a remarkable therapeutic regimen. However, besides being more than just a tool or technique, it promises to be a probe into the very core of our being. To grasp this idea, we need to know what MMWR is, how it is being used, and just how it poses as a doorway to knowing more about our very existence, our mental states and how we fit into the universe. Ultimately, our position as human beings allows us to ask, "Who are we? Why are we here? What happens after our earthly existence?" What can be learned by controlled death, and how can controlled death be brought about with an appropriate transition? This essay examines these issues and proposes avenues for exploration, with an invitation to participate in research potentially to be sponsored by United States funding organizations. Author is investigating potential funding sources, together with an available sponsored research facility in Carson City, Nevada, USA.

1. Introduction - What is MMRW?

The Millimeter Wave Radiation (MMWR) band lies between 1 mm and 10 mm of the electromagnetic spectrum at the higher frequency edge of the microwave spectrum. MMWR therapies and techniques comprise a part of a larger field known as bioelectromagnetics (BEM). BEM is the theory and application of energy in the electromagnetic spectrum from over 0 Hz to above 10^{25} Hz. (BEMS, Alexeev and Ziskin, Shironosov, Devyatkov and Betskii, p. 10, Rakovic). Thermal effects create a temperature rise at the limit of 10 mW/cm^2 of the radiated surface (Devyatkov and Betskii, p. 10; Heynick and Polson, p. 2) and are usually readily observable, sometimes with accompanying psychological effects. The less apparent non-thermal low intensity MMWR affects neural transmissions, hence our mental state, including that associated with the transition between life and death. (Rakovic). To avoid the discussion of what constitutes consciousness, I use the term "mental state," a description of the intangible interaction of an organism with its environment. By "intangible," I mean that we

are not relying upon direct measurement of sensory input for our description.

2. The underpinning of MMW and life - what ultimately exists

We are talking about the extent of millimeter wave radiation's effect on our mental states. Our method is to examine the most profound level at which this happens. What is the common denominator of MMWR and mental states? What ultimately does exist, here, and how do we know? In 1652, Rene Descartes set forth in his *Discourse on the Method* a radically different approach to understanding. Descartes said, "I wished to descend to those [things] which were more particular, so many objects of various kinds presented themselves to me." (Descartes, pp. 121) You come to know the whole by dividing it into its smaller constituents, and, continuing the process, you approach the infinitesimal. By subdividing a discernable whole, you end in a world of the unseen and are confronting quarks, with the processes that govern their interactions. Beyond the capability to measure exists for many persons the world of the abstract. So, how might we know the reality that manifests MMWR and mental states?

Bi-polar epistemologies, knowing by apprehending a whole (synthesis) and knowing by dividing the whole into its constituents (analysis), reveal the two parts of the dialectic: the process that generates the infinite and the process that generates the infinitesimal. Something is understood in terms of what it is not. The vast expanse of eternity, described by both extremes together, can be apprehended only in terms of the miniscule; the miniscule can be apprehended only in terms of the vast expanses of eternity. Computations that extend past our ability to measure point to a seemingly abstract world.

Physicists do not see this movement between the abstract to real as a foreign idea, but there still are problems. We have processes, devices, and measurement techniques that allow us to observe apparent evidence of fundamental processes. For example, statistical mechanics is an attempt to make the problem of particle locality manageable. This is because of what might be called "perceptual lag." There is a computable amount of time for emitted photons to leave an entity and reach a receptor; the entity's world-time description has changed. Heisenberg's apparent paradox about position and momentum simply is another re-statement of this "perceptual lag." Now, in identifying the real, what focal point in your physical body identifies this "perceptual lag?" No homunculus provides a central processing location. Consequently, we have locality and identification as problems for the apprehending the Real. We can then ask, "What may be the locus of Reality?"

If we cannot identify a particle as the fundamental unit or locus of Reality, we can refer to a change in space-time, s-t, but what is the smallest amount of space-time

transition? The infinitesimal calculus sets the limit as a smallest unit; or we have continuity. (This issue also shapes what constitutes life, itself.) Rephrasing the question, "What *is* change?" We then set the boundaries of the s-t locus of Reality according to a character of process.

Our universe and the dimensions framing it are not bounded necessarily by measurements of static entities, such as the number of light years, but by processes, such as the speed of light or relationships, as in the inverse square law of relational bodies. These processes and relationships are manifestations of the fundamental existent of pure movement. The physical laws resulting from those processes and relationships frame the dimension and subsequently the boundary of the universe.

Processes and relationships reveal the smallest inflection of space-time. What we can understand phenomenologically is bounded by our capacity to measure. Our scientific understanding, especially our conceptualizations, relies upon our verifying by observation, but the boundary parameter set by the character of process determines the ultimate measurement limit. Even though we may be able some day to discern that smallest inflection of space-time, thus apprehending fundamental process, we are now paradoxically forced to discern its deductive nature by inductive reasoning, thus knowing something probabilistically.

From this space-time inflection, everything emerges – quarks, atoms, molecules, you, me, and even ideas. This inflection is within our dimension bounded by process. At the end, heat death, energy is dispersed; there is no more movement; this is the absolute of motionlessness in this dimension. If heat death indeed is the end, Einstein's interconvertibility of matter and energy reverts to dispersed energy/matter, or nothingness. The process boundary of this dimension may allow a change of condition or exchange with another universe. At least, entertaining such a possibility mitigates the bleakness of finality.

We may say, then, the abstract has become real, and what we take to be real is abstract. The Real consists of that which is. The smallest entity, as the smallest inflection of space-time, forms the basis of that which is constructed, and that which is constructed may be altered. Whatever is alterable is abstract and contaminated by the means of constructing it; what is unchangeable is Real. More broadly put, we will what is alterable, while Reality has its own will. Such is its locus. So, too, Reality governs the limits of our apprehending s-t and its loci.

Common to both life and mental state is the substrate of motion, and its manifestation, the smallest inflection of space-time (opposed to "particles"). It is to motion we must direct ourselves for elucidating our nature. MMW

radiation is an aspect of that substrate (as suggested in the work of Hameroff *et al* on microtubules). If everything is reducible to movement, or energy, then, it would stand to reason that energy affects energy. Given this, we can ask about MMWR interactions with the human organism, including our mental being. At the end, heat death (so well described by Paul Davies in his last chapter of *God and the New Physics*), energy is dispersed. There is no more movement; this is the absolute of motionlessness in this dimension. It is the reality of Boltzmann. If heat death indeed is the end, Einstein's interconvertibility of matter and energy reverts to dispersed energy/matter, or nothingness. This prospect presses on towards search for an open door to endless continuity of our dimension and our identities within it.

3. Crossing the River Styx

In Classical mythology, people die, board a boat and cross over River Styx to the land of the dead. What happens to our mental being after we are declared "deceased?" Physically, we can observe the effects of death, such as the absence of heartbeat and no pulmonary function. A thought experiment expresses how our search for answers might proceed. It is similar to the theme in the movie "Flatliners," where youthful researchers attempt to induce a death state in a person and then attempt revival. (Flatliners) Several situations seem to lend justification for pursuing this idea.

Rakovic has reported that he was able to subject individuals to 57-78 GHz radiation for 20 minutes and induce a meditative state, i.e., a recorded EEG state of 4 Hz. (Rakovic, pp. 399-412) If a person can be brought to a near 0 Hz state, can one be brought to a 0 Hz state? If persons who have been clinically dead have recovered fully, what logically would prevent a person who has been brought to that state artificially from being brought back to normal? It may be that our measurement limits dictate a 0 Hz, when, in fact, persons may be very much alive past our ability to observe. Then, again, we are faced with the continuity problem in ascertaining when life ends.

Controlled death" may be involved with the Nirvikalpa Samadhi yogi, whose ultimate aim is to induce death. (*Talks with Ramana*, 3rd edition, page 293) ("Samadhi—According to Hittleman, Samadhi 'represents the attainment of yoga, wherein reintegration and ultimate union are experienced.' The individual self is absorbed in the "universal mind."
(<http://www.cardisense.com/yoga2.htm>)

Green and Green report that Swami Rama controlled his temperature, blood flow, brain waves and heartbeat, which at one time stopped. As a result of techniques from Hatha and Radja Yoga, other Yogis had previously demonstrated this enormous ability to stop the heartbeat, at times, for a considerable time span. (Green and Green)

Other researchers claim observing a significant drops in blood pressure as the result of Yoga. Additionally, they write of an increase in red blood cells, a significant change in the hematocrit values, and increases in hemoglobin and lymphocyte counts. (Funderburk, Patel, Bhole) If a person can bring her/himself to a death state by yoga, could an experimenter under controlled laboratory conditions induce such a condition artificially? We board and Charon rows across, but we have the privilege of coming back to present evidence of what happened. How can we get persons to come aboard the boat? Capturing this information from a person actually dying is difficult because of the person's inability to recover and report what has happened. So, we create it through controlled death. Persinger has argued in his work on tectonic strain theory that earthquakes generate electromagnetic waves that make humans think that they have been abducted by aliens. What is remarkable is that he has been able to create this condition in people by inducing mental states with mixed static magnetic fields various devices. (Persinger) In essence, Rakovic with MMW radiation and Persinger's work invite us to create the mental state of dying.

Now, how do we describe the mental state of individuals undergoing such transitions? In principle it is possible to brain map (combination of MRI, PET, sonogram, and EEG) various mental states, building, as it were, a vocabulary of concepts. That is, a brain map would correspond to the subject's mental state. Work is currently being done to that effect. Techniques, such as Brain Activity Maps, offer promise for useful correlations between measurement and condition. (Hardt) For example, Tononi and others are investigating neural correlates of perceptual dominance in humans.

A red vertical grating flickering at one frequency was presented to one eye through a red filter and a blue horizontal grating flickering at a different frequency was presented to the other eye through a blue filter. Steady-state neuromagnetic responses at the two frequencies were used as tags for the two stimuli and analyzed with high-resolution power spectra. (Tononi and Srinivasan)

From approaches like these, a conceptual vocabulary would be mapped to that person's expression of it, i.e., by reportage, or by the correlation of stimuli receptors (the five or so senses) to brain activity (PET, MRI, and EEG). In common parlance, what is happening to the person? Once we find out, in principle, it should be possible to reproduce that condition by modern means, such as electro stimulation of critical brain areas.

4. Conclusion - Reporting from the other side of the River Styx

MMW research offers methods and has research implications for exploring our being and the previously forbidden world of the beyond. By carrying a reasoning process rejuvenated by the Enlightenment (read "illumination") to a further extent, we have reduced the universe to its ultimate conceptual constituents of reality, movement within a dimension bounded by a process. For the opposite process, inspired by ancient oriental philosophy, we extend to the infinite. The nature of process is expressed by the most fundamental law of all – that which exists in terms of what it is not. What we are exists in terms of what we are not, and what we are not is what we may be after we transition from where we are. What really does happen to us after we die? This motivates the present quest. It is the age-old question common to all religions and is the ultimate focus of human exploits. Given sufficient will, we can know, and with sufficient courage, we will, with a will imbued with its full meaning and implications.

So, where do we go from here? So many papers end with a flourish and pirouette without a pointer to a way to continue in the direction argued for by the author, or any direction towards discovering who we are, why we are here, and, above all, where we are going. Mine is a departure from the norm, in that I suspect that a number of researchers are seeking an avenue to test their theories in the domain about which I have written. Accordingly, without elaborating on details, I have identified a source of independent United States funding organizations willing to fund such research. Such grant application and possible approval process is without fee and obligation, with research to be conducted at a Carson City, Nevada, USA site under the auspices of a non-profit foundation. My expertise as a technical communicator and grant facilitator is available *gratis* to those willing to take the plunge.

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