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The Bio-Orthophotonic Concept of healing energy: Quantum Orthomolecular medicine, the next frontier

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"Our knowledge enables us to evaluate the extent of our ignorance."
David Gross

Resumen

Objetivo: Presentar el nuevo concepto de Bioortofotónica, fundamentado en diversas teorías científicas.

Materiales y Métodos: Análisis de la literatura encontrada en la base de datos SciELO, ProQuest y EBSCO.

Resultados: La vida se manifiesta en los humanos en grados de salud y enfermedad relativa, que en cierto modo reflejan la capacidad de nuestras mentes, emociones y cuerpos para funcionar, procesar y regular la energía. Lograr y mantener el orden y la organización para lograr una homeostasis (salud) altamente funcional requiere energía estructurada y coherente y una comunicación efectiva proporcional a la complejidad del sistema. Muchas culturas apoyan la idea de que, al desarrollar una sensibilidad, percepción y conciencia más profundas del flujo de energía en nuestras mentes y cuerpos, los humanos pueden adquirir sabiduría y promover el bienestar y la curación. Algunos de los conceptos culturales relacionados con la energía incluyen chi, ki, prana, chakras, nadis y meridianos. Otros conceptos relevantes que discutiremos incluyen infocéuticos, biocampo y agua estructurada.

Conclusión: Presentamos un nuevo concepto energético al que denominamos Bio-ortofotónica y que se define como la correcta utilización de la energía para dirigir la homeostasis. El desarrollo de la teoría de la relatividad y la física cuántica allanó el camino para integrar antiguos conceptos culturales de energía. Junto a otros avances en el campo de la biofísica, la biología, la epigenética, la neurociencia, la psicología y la psicosomática están permitiendo comprender la conexión entre la energía electromagnética, las vibraciones sonoras, la expresión genética y la señalización biológica como herramienta de bienestar y curación. Aquí discutimos cómo nuestra creciente comprensión de la energía y la información se puede aprovechar y utilizar para lograr la salud y el bienestar.

Palabra clave: *Medicina Ortomolecular, Bio-Ortofotónico, Salud, Energía, Sanación Energética*

Abstract

Aim: To present the new concept of Bio-orthophotonics based on scientific theories.

Materials and methods: Analysis of literature data found in the Pubmed and EBSCO databases.

Results: Life manifests in humans in degrees of relative health and disease, which in a way reflect the ability of our minds, emotions, and bodies to function, process, and regulate energy. Achieving and sustaining order and organization to attain highly functional homeostasis (health) requires structured and coherent energy and effective communication proportional to the system's complexity. Many cultures support the notion that by developing a deeper sensibility, perception, and consciousness of the flow of energy in our minds and bodies, humans can acquire wisdom and promote wellness and healing. Some of the cultural concepts related to energy include chi, ki, prana, chakras, nadis, and meridians. Other relevant concepts we will discuss include infoceuticals, biofield, and structured water.

Conclusion: We present a new energetic concept we named Bio-orthophotonics which is defined as the correct utilization of energy to direct homeostasis. The development of the theory of relativity and quantum physics paved the way to integrate ancient cultural concepts of energy. Along with other advances in the field of biophysics, biology, epigenetics, neuroscience, psychology and psychosomatics are allowing us to understand the connection between electromagnetic energy, sound vibrations, gene expression and biological signaling as a tool for wellness and healing. Here we discussed how our increasing understanding of energy and information can be harnessed and used for health and wellness attainment.

Keywords: *Orthomolecular Medicine, Bio-Orthophotonic, Health, Energy, Healing Energy*

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Introduction: Energy as Information Reviving an Old Paradigm

Energy represents the capacity of changing the state of a system or performing work. Information is what is conveyed or represented by a particular arrangement or sequence of things. Energy is needed for order, organization and communication. There is no communication without information (González et al .2019). This concept was well understood by ancient healing cultures (Chinese Traditional Medicine, Ayurveda) and in more recent times rescued by Chiropractic (Palmer).

Our current understanding of Biology has been built primarily through reductionism. This reductionist approach has resulted in highly specialized knowledge. Nevertheless, biological systems in their broadest definition are anti-entropy systems that emerge from the nexus of energy, information, and matter. Therefore, a holistic and vitalistic approach aided by quantum physics is needed to mechanistically understand the physiological balance necessary to attain the true healthy state. Information, energy, and matter are fundamental properties of all levels of biological organization (González et al. 2023). To the extent that biological systems are ordered and in disequilibrium with their surroundings, they require energy to overcome the natural tendency of physical systems to move towards increasing entropy (Hoke et al. 2021). In biological scenarios, energy, matter, and information are constantly being interconverted, so the nexus between them is a dynamic system. Because living systems are not closed systems, but rather open systems that exist far from equilibrium, applying physical principles to biology is inherently complex. It can only be explained by quantum principles.

Health and disease have been proposed to be related to the flow or stagnation of our energetic systems (Srinivasan, 2014). The movement of energy relies on information. The field of space (Ether) is filled with information, the entire universe has an underlying control system that determines how energy moves, combines, and creates the physical world (Klco, 2022). The current basic premise of biology states that health depends on communication equally inside the organism and between the organism and its environment. Since there is significant research on the signaling in living systems from the physical/molecular to the chemical/atomic level of communication, the next frontier is harnessing the power of energy and its capacity to transmit the right signals (ortho information) to promote health (Rosch, 2009). In physics, the behavior of a relativistic particle moving under the influence of a uniform magnetic field and a stationary electrostatic wave has been studied and found that it can drastically reduce disorder (de Sousa, 2012).

The biological consequence of Einstein's statement that "the energy field governs the particle" means that by correcting the flow of energy in the body we may provide the means to correct insufficiencies in energy. This corrected or supplied energy that provides the information that incites the necessary order of the particles (matter-molecules and tissues) and therefore reverses the pathological or disease state. When energy flows correctly, everything works well. Traditional Chinese medicine (TCM) has worked with the flow of energy in the body for thousands of years (Zheng, 2005). With the development of quantum mechanics by Einstein, Planck, Heisenberg, Bohr, and others; Western science entered the age of paradox in physics. This particular transformation of scientific understanding provides possible explanations of what was considered unexplainable phenomenon. Quantum physics and biology have long been regarded as unrelated disciplines nevertheless, there are emergent interconnections between the two fields. After the establishment of quantum physics, a renewal conceptual framework for molecular bonds was developed through quantum chemistry. In recent years individual biological phenomena such as photosynthesis, bird navigation, metabolism and consciousness have been attributed to quantum mechanics phenomena in biology (Tuszynski, 2020).

Quantum physics includes a wide variety of phenomena that fits very well the biological complexity. Most of them are regarded as unusual because they violate our everyday expectations of how nature should behave, in addition of not following Newtonian physics. The conceptual framework created by Descartes was completed by Newton who developed a mathematical formulation of the mechanistic view of nature in a three-dimensional space. This concept is challenged by the proposition of Planck, Erwin Schrödinger, Werner Heisenberg, Richard Feynman, Albert Einstein and others related to energy at the quantum level. However, much earlier several ancient cultures had proposed a variety of concepts of life energy called chi, ki, prana, odic force and others that provide a vitalistic explanation of biological energy (Rosch, 2009). Interestingly, ancient medical traditions accomplished healing by moving energy. Brennan defined the universal energy field (UEF) as the life energy that surrounds and penetrates everything and is also known as bioplasma (Brennan, 1988; Brennan, 1993). The first theory that achieved full agreement between quantum mechanics and special relativity is Quantum electrodynamics (QED). QED describes in mathematical terms the phenomena concerning electrically charged particles interacting with photons (force particles). These concepts unify energies as perceived by ancient healing practices.

Energy (Qi, Prana, Neuma, Life Force) or Euenergy (true, total energy concept) Revisited

Energy is defined as the capacity for doing work, but energy is a lot more complex than this short, concise and limited definition. Terms such as force, might, power and strength are all associated with energy and tied to the ability to exert effort, or cause a change in an object of a certain magnitude and direction. Energy fuels and regulates the body's natural internal functions. It is necessary to support all cellular functions, metabolism, reproduction, cell repair and cellular reproduction to support all body functions necessary to maintain homeostasis.

Respiration is a multistage process that takes place within each cell of the body to produce the energy needed by the cell. There are three main stages of respiration: glycolysis, the Krebs cycle, and oxidative phosphorylation. These processes, although biochemical, have quantum components, especially in the electron transport system (Bennett, 2019).

There are some general principles of bioenergetics. The first principle of bioenergetics states that life exchanges energy. The second principle states that fields govern energy. The third principle states that fields communicate information. By sending information through fields, parts of the body can communicate with one another instantly (entanglement and non-locality concepts of quantum physics). An electron may travel at the speed of light through a magnetic field. This particular form of electromagnetic communication (perineural) complemented by electrochemical neural communication permits the body to work so well as a single unit. Biochemical mechanisms simply would not be fast enough to accomplish this feat (Rosch, 2009).

The 3 primary energy systems: Mitochondria, Nervous System and Energetic Channels

The body has 3 primary energy systems:

1. Mitochondria- Organelles that make cellular energy in the form of ATP, heat and light. The key to biological energy enhancement is not sugar or stimulants, it's optimizing the mitochondria. One of the most potent ways to improve energy levels is to repair the physical membranes of your mitochondria (González et al. 2018). Cofactors Involved in mitochondria energy production are needed. These are substances that facilitate the process of mitochondria producing cellular energy. This system in turn has 3 subsystems: Phosphagen (immediate source) Anaerobic (glycolytic, generally slow, limited and primitive, uses carbohydrates) Aerobic (oxidative, slow, more complex, uses either carbohydrate or fat).
2. Nervous system-The autonomic nervous system plays a crucial role in the control of energy balance. The Sympathetic Nervous System (SNS) prepares the body to react and expend energy in times of stress. The Parasympathetic Nervous System (PNS) supports body functions that conserve and restore energy during periods of rest and recovery.
3. Subtle Energetic Channels- The subtle energy system has three components: the meridians, chakras, and aura. Meridians or nadis in the Eastern traditions of Chinese Medicine and Ayurveda are pathways in which energy travel within our tissues that run on each side of the body. There are 12 major meridians, and one side mirrors the other. Each meridian is correlated to an internal organ. Chakras are spinning energy centers that receive and express subtle energy and emotions. In the Hindu system, there are seven main chakras. The chakras are anchored in the core of the body and lie along a straight central energy line, otherwise known as the Hara line. While the nervous system can be considered electrical since it produces electric currents, the chakras can be considered as magnetic since it can be viewed as producing a magnetic field. Chakras project into the corresponding layer of the aura via front and back emanations. The aura is a multilayered light that surrounds all beings, an individual vibrational field.

Energy can flow through the electromagnetic field. The electromagnetic field, along with water, forms the matrix of life. Water can form structures that transmit energy (structured water). The structures are the layers of water intimately associated with the surfaces of proteins, DNA and other molecules in the living matrix. This interfacial or structured water is essential for the conformational stability and functioning of proteins and DNA. Each fiber of the living matrix, both outside and inside cells and nuclei, and the genetic material, is surrounded by an organized layer of water that can serve as a channel of communication and energy flow. Vibrational information is transferred through a tissue tensegrity-matrix which acts as a coupled harmonic oscillator operating as a signal-transducing system.

All the tissues of the body produce magnetic fields (Hammerschlag, 2015). The highest magnetic fields are registered in the brain and the heart. The heart is the most potent source of electromagnetic energy in the human body. The electrical field of the heart is around 60 times larger in amplitude than the electrical activity generated by the brain (McCraty, 2016). This field is measured with the use of an electrocardiogram (ECG) (Dirlich, 1997) and can also be detected up to 3 feet away from the body, in all directions by using a superconducting quantum interference device (SQUID) magnetometer (McCraty, 2016). All electromagnetic energy has its own amplitude and frequency. Frequency and amplitude are related in an inversely proportional way.

Our bodies are made of energy arranged into matter. The physiological control system is able to communicate information instantly through resonance. The control system or body field uses the resonance of energy signals to provide the necessary communication throughout the body. Energy levels will be paradigm-changing in biochemistry, taking this science into the realm of quantum mechanics.

Conscious energy defined as innate intelligence (Biological Intelligence) was presented by D.D. Palmer, the founder of chiropractic. This idea of energy, information and communication is the basis of this health practice. Chiropractors help improve the flow of this healing energy through the removal of subluxations. Acupuncturists stimulate points on the body to achieve the same results. These are not the only ways to improve energy flow throughout the body, things such as exercise, proper diet, rest and a positive mental outlook can also help. The subject of subtle energy effects on the body has been a matter of controversy and confusion because opinions and discussions have been influenced by economic, religious and political issues that should not be a part of biological and medical explanations.

The photon is defined as the primary angular momentum of the electron times the speed of light. Light is a quantum particle of energy called a photon. Different frequencies (colors) mean that each photon packet has a different energy from every other photon packet. The photon is a discrete parcel of energy. The quantum of electromagnetic energy is regarded as a discrete particle having zero mass, no electric charge and an indefinitely long lifetime. The photon is pure energy. The three electrical forces are electrostatic force, the proportion of electric force (weak interaction), and electromagnetic (strong) force, respectively.

The Biofield: The Dynamic Energy of Living Systems

A field is a region of space containing objects. The Biofield is an energy blueprint that corresponds to an entire living organism. It allows for rapid communication throughout the body. It is the matrix that connects our physical, emotional, and mental dimensions. Biofield physiology is proposed as an overarching descriptor for the electromagnetic, biophotonic and other types of spatially distributed fields that living systems generate and respond to as integral aspects of cellular, tissue and whole organism self-regulation and organization. As such, biofields can be viewed as affecting physiological regulatory systems in a manner that complements the more familiar molecular-based mechanisms. Life rhythm is a symphony of oscillatory vibrating patterns.

The function of the biofield in the body's innate self-healing mechanisms is hypothesized, based on the concept of bio-information which, mediated by consciousness, functions at the quantum level to supply coherence and pattern information to modulate and normalize all physiologic processes (Rein, 2004). The properties of the biofield are proposed to be based on electromagnetic fields, coherent states, biophotons and quantum and quantum-like processes that determine the level of health and consciousness (Kafatos, 2015).

The perception of the environment or a person's thought process induces distinctive electrical impulses in the brain. These signals travel throughout the body and emit out in the form of electromagnetic radiation which is termed the aura or biofield Energy (Chhabra Gunjan, 2013; Srivastava, 2017). The human aura, the energy field that surrounds the body is an example of our quantum energetic state. There are seven energetic layers to the aura, extending within and beyond the physical body, each with its vibration patterns. This biofield is different in every person and it can be viewed in different layers of colors, sounds, shapes and structures. (Chhabra Gunjan, 2013). These seven layers correspond to the chakras (Sanskrit word for wheels) vortices of energy and light, first described in the Sanskrit Yoga Upanishads some 3000 years ago (Eden, 1998; Schneider, 2019). The chakras are not physical or anatomical structures but subtle energy centers in the human body (Govinda, 2002).

Vibrations: The Constant Motion of Life

A vibration is a rapid motion (as of a stretched cord) back and forth. We are made of vibrating energy. Vibration refers to the oscillating and vibrating movement of atoms and particles caused by energy. Frequency refers to the rate at which the vibrations and oscillations occur.

All life exists within an ocean of vibration and rhythm is fundamental to all of life. Rhythms are all over the universe; from the rotation of galaxies every billion years, the earth's orbit of one year, heart rate of 80 times per minute. Living organisms have a molecular clock that controls mitochondrial rhythmicity (de Goede, 2018). Music has been demonstrated to regulate several cardiac and neurological functions and to trigger measurable stress-reducing effects (Cervellin, 2011). It has also shown effects in modulation of blood pressure, heart rate, respiration, EEG measurements, body temperature, immune parameters, endocrine function and amelioration of pain, anxiety, nausea, fatigue and depression (Myskja, 2000). Discoveries in the fields of biophysics, biology, epigenetics, neuroscience, psychology, and psychosomatics are allowing us to understand the connection between electromagnetic energy and sound vibrations in gene expression and biological signaling as a tool for wellness and healing.

These findings support the notion of a subtle biofield information managing system that is closely implicated in the regulation of basic biological processes, from the molecular level to the whole organism (Muehsam, 2014).

According to The Universal Law, everything in the Universe is in constant movement (Newton's Universal Laws of Gravitation, Newton, 1687) and vibrating (Einstein, 1955; Green, 1984). Ultimately, all matter is just vibrations of various underlying fields. We are a living energy field, composed of energy-producing particles and these are all in constant motion. Vibrations generate electromagnetic energy that can cause changes in the cells. Cell voltage is essential for cells to communicate properly. Basically, all of the cell processes are absolutely dependent on the cell voltage. By varying the vibration of one kind of matter it could be transformed into another. Everything in a state of vibration also emits sounds and frequencies.

Movement equals life… We must move to eat, breathe, digest, assimilate, eliminate and procreate. Without movement, we would cease to exist. We are energetic beings. This life force is the same energy that gives life to plants, it flows throughout the universe. The absence of this energy is death, if it is still present but merely decreased, then disease and dysfunction occur. If you want to live a long, healthy life, it's vital to incorporate exercise into your everyday routine.

Tai chi is a system of exercise and movement developed as a martial or training art that is used for health and wellness. Often known as moving meditation, tai chi is a series of slow, gentle motions that are patterned after movements in nature.

Qi gong is an internal process that has external movements. Qi means life force, the energy that powers our body and spirit. Gong is the term meaning work. Qi Gong together means a form of movement and mind using intention and mindfulness to guide qi to make qi work. Qi gong is often referred to as the internal part of tai chi. Qi gong practice typically involves moving meditation, coordinating slow-flowing movement, deep rhythmic breathing, and a calm meditative state of mind. Qi gong involves the mind (presence), movement (action), breath (flow), and vision (focus). Both are related to the flow of energy through the body.

"Consciousness is only possible through change; change is only possible through movement."
Aldous Huxley

Frequencies and Wavelengths: Life's Symphony

Frequency refers to the rate at which something occurs or is repeated over a particular period of time. The rate at which a vibration occurs that constitutes a wave, either in a material (as in sound waves), or in an electromagnetic field (as in radio waves and light), is usually measured per second. It is measured in Hertz (Hz) = One hertz is equal to one cycle per second. Frequency and wavelength are inversely proportional to each other. The wave with the greatest frequency has the shortest wavelength.

Colors reflect different frequencies. In order from lowest frequency to highest, they are red, orange, yellow, green, blue, indigo, and violet. Because of the inverse relationship, they are reversed in order by wavelength. The color with the highest frequency is violet. The color of a photon is determined by the frequency at which the photon resonates, which, in turn, is a factor in its wavelength. The wavelength of light is defined as the distance between the crests or troughs of a wave motion. Frequency is the number of occurrences of a repeating event per unit of time. In the case of light, frequency refers to the number of times a wavelength is repeated per second.

Quantum Chromodynamics (QCD) is the quantum field theory that describes the properties of the strong interactions between quarks (mass particles) which are mediated by gluons (force particles). Quarks are elementary particles that make up composite hadrons (i.e., protons and neutrons) and possess a distinctive property called color that governs their binding together to form other elementary particles. Analogous to electric charge in charged particles, color is of three varieties, arbitrarily designated as red, blue, and yellow. All are capable of influencing the Biofield. Physical bodies are expressions of frequencies. Frequency and information may be imprinted into the water by succussion (homeopathy principle) (Rey, 2003; Smith, 2004). A typical human eye will respond to wavelengths from about 380 to about 750 nanometers. In terms of frequency, this corresponds to a band in the vicinity of 400–790 terahertz.

Resonance: Quantum Coordination

The phenomenon of resonance signaling refers to the effect on the amplitude that occurs when the frequency of an applied periodic force is similar to the natural frequency of the system. Resonance is involved in how specific frequencies modulate cellular function to restore or maintain health. Resonance allows for an energetic dialogue. Resonance was initially conceived in acoustics in relation to sound and was later applied to electromagnetism. Resonance is a phenomenon that amplifies a vibration. In electromagnetism, resonance concerns how vibrating energy fields interact with and influence each other. In particular, pulse rates, or frequencies, of microcurrents and wavelengths (colors) of light each resonate with various body systems and tissues. Resonance is the way in which memories are transferred through space and time (Hunt & Schooler, 2019). When energy moves freely throughout the body without interference, it is allowed to resonate at a higher frequency. Those who learn to cultivate the flow of this energy through healthy choices and habits experience an abundance of energy, are rarely sick and are less prone or more resistant to disease.

Albert Szent- Györgyi (1893-1986), the First Quantum Biologist

Albert Szent- Györgyi was certain that the random bumping of molecules proposed as a mechanism in basic solution biochemistry was too slow to explain the speed and movements of life. He focused on electrons, protons, and energy fields. Szent- Györgyi proposed that proteins are semiconductors and are thereby capable of rapidly transferring free electrons from place to place within an organism (Szent- Györgyi, 1941a, b). Szent- Györgyi continued to explore electronic conduction and charge transfer effects from the quantum perspective.

Semiconduction and piezoelectricity are two electrical qualities of the crystalline substances that occur prolifically in the human body. Semiconduction is the only known mode of conduction outside of metal wires capable of transmitting very small currents over long distances, but this transmission is possible only in substances with very orderly molecular structures, such as crystals. Many crystals are semiconductors, able to both conduct and resist electrical flow, so are somewhere between insulators and conductors. Semiconduction allows for many activities vital to life processes.

Szent-Györgyi was the first to point out that the molecular structures of the human body are sufficiently well organized to support semiconduction through passing information along chains of protein molecules. Many energy-healing therapeutic techniques may be understood as reversals of state of polarization in a three-dimensional, crystalline network. The crystal lattice is able to amplify, transmute, transform, transfer, transmit, and transduce electromagnetic energy. Crystalline structures are mathematically precise, highly ordered, geometrically arranged lattice structures representing the lowest possible entropic state.

Szent- Györgyi stated that molecules do not have to touch each other to interact. Energy can flow through the electromagnetic field. The electromagnetic field, along with water, forms the matrix of life. Water can form structures that transmit energy. These structures are the layers of water intimately associated with the surfaces of proteins, DNA, and other molecules in the living matrix. This interfacial or structured water is essential for the conformational stability and functioning of proteins and DNA.

Energy and Structured Water

Water has the ability to structure itself. Water can behave like a liquid crystal. This in part helps explain some unusual properties of water. Instead of the familiar H2O of liquid water, the water molecules combine into a new, more structured, more viscous, and less fluid form H3O2. Hydrophilic surfaces such as within the cell generate structural changes denominated as interfacial water. This interfacial structured water that has generally only a few layers of molecules creates an exclusion of colloidal and molecular solutes (Exclusion Zone, or “EZ layer) and becomes more gel-like rather than a liquid (Sharma 2018). The EZ structure or interfacial water layers takes on a particular charge (usually a negative charge), and the bulk water takes on an opposite charge, literally creating a battery with voltage. This voltage is necessary for nerve transmission and cellular communication. EZ layer and its battery effect increase in the presence of light, especially infrared light (heat). This is called the fourth phase of water, where water forms structures around hydrophilic surfaces, such as the inner and outer membranes of every cell in the body (Pollack, 2013). Light and heat can build up these structured layers and form a battery throughout the body. This property is extremely important to explain the ability of the body to use certain frequencies to improve mitochondrial energy. Red and near-infrared (NIR) photons (675 nm) interact with interfacial water layers (IWL) in the mitochondria and therefore, the primary acceptor for near-infrared light is mitochondrial-bound water (Somer, 2019).

As mentioned before this structured water becomes less like a liquid and more like a gel. This more solid phase permits structured water to retain information about molecules and electronic signatures. The idea that structured water can store and share information is gaining acceptance as evidence continues to mount.

This can explain the mechanism involved in homeopathy. Like all new ideas that involve a change from the current way of thinking, it faces resistance such as the orthomolecular medicine concept. In this sense, a biologically active substance may cause changes in the body by its ability to communicate with the body field (Physiological Modulation; González, et al. 2019b). The substance has an energy signature, or frequency,

that interacts with the body field and causes it to react, then if you removed the physical substance but retain its energy signature that signature would still have an effect. In this case, water has been imprinted with (remembers) the information or signature of the Biological Active Substance (BAS). The small-dose approach is even the concept behind vaccinations. The concept is to electronically produce a frequency pattern in water and get it to produce a biological effect (Massey and McCardell, 2022). Restoring integrity to the body field provides a more friendly and less toxic alternative to the pharmacological approach. Water is able to receive, retain and return information because it fluctuates between coherent and non-coherent states. This enables water to be an excellent medium for communication water rearranges its structure of molecular arrangement in order to encode, transmit and integrate new information. In general, water has vortexing, superconducting, energy-generating, and transmitting potential.

Gerald H Pollack (1940- NA) The Fourth Phase of Water

Gerald Pollack is Professor of Bioengineering at University of Washington. He is the leading authority in the field of water structuring. He has been studying the phenomena in water for years; his major achievement is the discovery of "EZ water" or an exclusion zone in water. The fourth phase of water or EZ water is water with a special structure (H3O2), H3O2 sometimes called gel water, structured water or exclusion zone water (EZ water). The exclusion zone is a large stratum on the order of a few microns to a millimeter, observed in pure liquid water, from which particles of other materials in suspension are repelled. Structured water contains more oxygen. Structured water or magnetized water is altered to form a crystal like hexagonal molecular structure. This type of orderly water can enter cells easier and better hydrate them. Water within a healthy cell has a significant negative charge, but in a diseased or dying cell the negative charge is less. As cellular water loses its charge it loses its structure quickly, and this signals that the cell is losing order and organization that predisposes it to a pathological state.

Masuro Emoto (1943 -2014) Water Consciousness

Dr. Masaru Emoto was a Japanese scientist who revolutionized the idea that our thoughts and intentions impact the physical realm. For over 20 years he studied the scientific evidence of how the molecular structure in water transforms when it is exposed to human words, thoughts, sounds and intention by providing distinct frequencies and vibrations. Water stores information and crystallizes in different ways when frozen, depending on what kind of frequencies and vibrations it is exposed to.

Photobiomodulation and Energy: Improving the Effects of Light

Photobiomodulation (PBM) using low energy, especially red or near-infrared spectrum has been demonstrated to decrease acute side effects of radiation in rigorously conducted phase III randomized studies (Tam, 2020). PBM can reduce swelling, increase antioxidants, decrease inflammation, protect against apoptosis, and modulate the microglial activation state. All these mechanisms of action strongly suggest that PBM delivered to the head should be beneficial in cases of both acute and chronic Traumatic brain injury and possible stroke. There is evidence that PBM can help the brain repair processes by stimulating neurogenesis, upregulating BDNF synthesis, and encouraging synaptogenesis. In healthy human volunteers, PBM has been shown to increase regional cerebral blood flow, tissue oxygenation, and improve memory, mood, and cognitive function (Hamblin, 2018).

NIR light is associated with potent neuroprotective effects. The proposed underlying mechanisms of red/NIR light include improvement of neuronal mitochondrial function, increased blood flow to neural tissue, upregulation of cell survival mediators and restoration of normal microglial function (Beirne, 2017). A study evaluated a comprehensive cellular, molecular, and functional characterization of neuroprotective effects of 670 nm RL and 810 nm near-infrared light (NIRL) on blue light-damaged murine primary photoreceptors and showed that respiratory chain complexes are photobiomodulation targets leading to enhanced mitochondrial energy metabolism. Further analysis of gene expression identified upregulation α-crystallins that indicate enhanced production of proteins with protective functions (Heinig, 2020). Another study in an animal model evaluated NIR (670 nm) emission on cellular protection against hypoxia and reoxygenation-induced cardiomyocyte injury. Mitochondrial metabolism, measured by ATP synthase activity, was increased by NIR, and NIR increased NO in cardiomyocytes, and the protective effect of NIR was completely reversed by the NO scavengers (Zhang, 2009).

NIR light-assisted phototherapy plays an important role in bone-related disease treatment and bone tissue regeneration, with significant promise for further biomedical and clinical applications (Wan, 2020).

Extracellular Matrix: The First Line of Cellular Defense

The living matrix is defined as the continuous molecular fabric of the organism, consisting of fascia, the other connective tissues, extracellular matrices, integrins, cytoskeletons, nuclear matrices and DNA. It is a body-wide communication system that is essential to all living functions. The living matrix must produce coherent or laser like oscillations (Frohlich, 1968).

The role of the extracellular matrix in mediating a variety of important physiological functions was a major topic of the research of Alfred Pischinger in 1975. Pischinger recognized that the body-wide ground regulation system is responsible for all vital functions (Pischinger, 2007). The common denominator of life in the vertebrate organism is not the cell but is a triad: capillary -matrix-cell. The extracellular matrix is a dynamic and vibrant and alive component of the organism with vital roles in the moment-by-moment operations of virtually all physiological processes.

In considering the role of fascia, it is important to recognize that the connective tissue is a composite material; it consists of a strong fibrous protein core, collagen, embedded in a soft polymer gel known as the ground substance. Collagen is the conductor of electrons (it is actually a semiconductor) and the ground substance stores the negative electrons. Each collagen molecule has a helical shell of water molecules intimately associated with it. Taken together the various layers of fascia form the largest organ system in the body, and the only system that touches all of the other systems. The highly regular and nearly crystalline arrays of collagen molecules organize equally regular arrays of water molecules, which tend to have a particular orientation with respect to the collagen because of interactions between the repeating charges on the collagen and the electrically polar water molecules (Oschman, 2003). Collagen is a helical structured protein in this living matrix. Also, in combination with those particular proteins is structured water in the matrix allowing it to transmit electrons.

An exciting property of the living matrix is the ability of the entire network to generate and conduct vibrations. Modern biophysical research is revealing a wide range of properties that enable the body to use sound, light, electricity, magnetic fields, heat, and other forms of vibrations as signals for integrating and coordinating diverse physiological activities.

The Cell membrane as an Information Facilitator

The cell membrane may be considered the brain of the cell since it actually drives the activity of the cell and provides the instructions to the DNA via the energy produced by the mitochondria. The cell membrane makes its survival and thriving decisions based on its current environment which is lined up with different proteins that act as antennas to detect the changing environment. Each protein receives different signals based on its three-dimensional shape and charge distribution. When a protein receives a signal, it changes its shape, which then cascades into other cellular activity. The movement of proteins drives life, all under the guidance of mitochondrial energy. These proteins would be surrounded by the structured water which gives the final shape of a protein. The protein surface fluctuations are controlled by water fluctuations. Water molecules work like a network to drive the movement of proteins. Moreover, protein receptors respond to vibrational frequencies. Consequently, membrane receptors respond to both physical and energetic environmental information. The cell membrane is surrounded by structured water and the extracellular matrix. This can be interpreted as a complementary synergistic physiological relationship.

Infomedicine: Energy as an Infoceutical

Infoceuticals are encoded with information therapeutic components that activate the body's self-repairing system. Infoceuticals provide quantum-level information to the body field. Energy has a discontinuous structure consisting of discrete packets of quanta and light consists of photons and particles that can move as waves in the immersed ocean of the ether. Creating and maintaining order requires energy; then the structured energy that is capable of facilitating the order that sustains healthy biochemistry, healthy physiology to maintain and repair physiology and tissues are infoceuticals. If the infoceutical energy is delivered in the form of photons, then it is orthophotonics.

Medicine in general focuses on the body's chemistry to suppress symptoms rather than supporting the body's healing processes. Nutrition focuses on the body's chemistry too, although the goal of nutrition is to support the body's healing. Chemistry is controlled by physics, through the control and movement of energy. Cell signaling is regarded as fundamental nevertheless it is usually thought of in a molecular manner, it is rarely if ever, framed in energy terms. Electromagnetism may provide an alternate route to molecular biology. All are dependent on energy and communication.

Light is part of an energy-based communication system in the body that's much faster than chemical communication. Photons, or particles of light, are a means of communication between electrons, and the movement of electrons in the body is key to all our biochemical processes. We are light beings who need coherent light to coordinate the trillions of biochemical processes happening in the body. Besides the coherence of light, we can also consider the frequency of light, which we perceive as colors. Every frequency carries its own information to support the body's communication system. Semirigid crystalline cellular structures, called the liquid crystal matrix, create significant electrical fields.

Ether and Subquantum kinetics: The Microphysical Energy Ocean

Ether could be considered a form of energy that circulates through the Universe as defined by Tesla.

- Luminiferous ether - Medium for the propagation of light was supported by Augustin-Jean Fresnel in the 19th century (Wright 2017). Maxwell demonstrated in the 1860s that light is electromagnetic waves and assumed that all electromagnetic waves, as visible light, are vibrations of the ether (Wright 2017).

- Mechanical gravitational ether – It is a mechanical explanation for Newton's gravitational force in terms of flows of tiny unseen particles modeled utilizing ether (Berger, 2005).

- Ether in General relativity – For Einstein, ether (aether) was a unit time-like vector gravitational field in a covariant modification of general relativity (Gasperini, 1987).

- Quantum vacuum – non-empty spacetime at extremely small scales that fluctuates and generates particle pairs that appear and disappear almost instantaneously (Dirac, 1951).

The modern concept of the vacuum of space, confirmed every day by experiments, is a relativistic ether. Ether, in physics, is a universal substance believed to act as the medium for the transmission of electromagnetic waves (e.g., light and X-rays). It is the cosmic energy that permeates all things. Within the human body, the chi (life energy) is seen as the vital force or living ether of the body.

In relation to quantum physic, the Heisenberg Uncertainty Principle states that subatomic particles only exist as probability functions. Wave-particle duality theory (complementarity principle states that subatomic particles can behave like both particles and waves. Einstein's has been interpreted as stating the dimension of mass and the unit of energy are equivalent. These concepts provide the basis for the notion of ether. The concept of the ether has taken many different forms.

Acknowledgment of the ether solves many problems in physics. A dynamic ether would explain some of the most complex difficulties in the Standard Model. Vacuum Energy is being explored for its potential as a source of endless energy. The ether could explain the missing mass in the universe.

The ether is the energy source accounting for the creation of our universe, but Einstein's theory caused scientists to replace the ether with abstract mathematical notions. The ether (or Akasha) of subquantum kinetics is a medium, also termed the transmuting ether that forms the substrate from which all physical form in our universe emerges. It can be described as an omnipresent, biophysically active energetic ether. The transmuting ether of subquantum kinetics bears some resemblance to the ether concept of Nikola Tesla. He proposed a gas-like ether that is acted on by a life-giving creative force. Ether-space is the universal physical space. All space, according to Bernoulli, is permeated by a fluid ether, containing an immense number of excessively small whirlpools. The elasticity which the ether appears to possess, and in virtue of which it is able to transmit vibration.

Ether could also be defined as a dynamic fabric of space-resonance composed of independent quantum units. The ether unit itself may exist within a greater and yet more primary "space-time" continuum. Greater space-time is not necessarily limited to the space-time dimensions that we perceive in the physical world.

Subquantum kinetics presents a substantially different paradigm from that of standard physics. Subquantum kinetics, which describes quantum phenomena by postulating activity on the subquantum level, appears to offer a promising framework for understanding nonlocal connectivity (Laviolette,1985). Many physicists consider that the theories which assume the existence of an ether frame and Einstein's relativity are equivalent. The ether concept is the Theory of Everything that unifies all four forces (including gravity).

Nicola Tesla (1856 –1943), The Quantum Leaper

Nikola Tesla observed that electrons transmitted through a near- perfect vacuum in his vacuum tubes appeared as corona several feet through the air surrounding the tube. Tesla then deduced that there must be a gas much finer than air molecules through which electrons could travel. Tesla also suggested that longitudinal waves in the ether might travel faster than the speed of light.

Nikola Tesla is the father of scalar energy. Tesla referred to scalar energy as radiant energy and felt that this was the primal force in the universe. Electromagnetic waves which exist only in the vacuum of empty space constitute an ocean of infinite energy called scalar energy. Scalar waves are a form of radio waves that creates what is known as Longitudinal Wave Interference; this is where two Scalar Waves meet, and an energy bottle is created which disintegrates all matter within that bottle, producing what is in effect a miniature atomic explosion but without any resulting radiation.

Tesla stated that ether was everywhere moving and dynamic. The use of the ether would be the salvation of humankind, with the power derived from it, with every form of energy obtained without effort, from stores forever inexhaustible, humanity will advance with giant strides. Tesla maintained his belief in the ether as the source of all substances. This, he thought, was the fundamental, unifying theory of physical things. He was quite unable to accept Einstein's theory of relativity and curved space.

Waves and particles: Duality Explained

A wave is defined as a propagating dynamic disturbance. A particle is defined as a small quantity of matter. Experimentally, light shows both wave and particle behavior, the wave-particle duality. A wave is not itself a material object. It is an event, a time-dependent disturbance propagating through a physical medium at a characteristic speed determined by the properties of that medium. In general, a wave is a disturbance propagating through a medium. When one throws a pebble (particle) into a pond, the disturbance spreads out as ripples (waves) propagating over its surface at a characteristic speed determined by the properties of the water medium. The same holds for sea waves, the disturbance here is caused by the wind (Fiennes, 2021). A wave is a disturbance, and for there to be a disturbance, something (some physical thing) has to be disturbed. One cannot have a disturbance of anything. Whenever energy is transmitted from one body to another, there must be a medium or substance. One of the most important aspects of waves is that they are encoders and carriers of information.

Georges Lakhovsky (1870-1942), Good Vibrations

Russian scientist and inventor Georges Lakhovsky stated that all cells of living beings emit and receive radiation and that altering their natural vibration causes them to lose vitality and malfunction. He also said that all cells are in resonance with two types of radiation: those coming from the interior of the Earth (telluric, and those coming from space), cosmic, including solar radiation. Therefore, as long as they vibrate harmonically resonating with them you will be healthy. Lakhovsky has been criticized by physicists ignorant of biology and by biologists ignorant of physics. Lakhovsky was the first experimenter to make use of high-frequency electromagnetic waves in the domain of biology. According to Lakhovsky the nucleus of a living cell may be compared to an electrical oscillating circuit. health is equivalent to the oscillatory equilibrium of living cells whereas disease is characterized by oscillatory disequilibrium.

Quantum Weirdness: The Quantum Realm of Uncertainty, Non-locality and Possibilities

Quantum weirdness encompasses the aspects of quantum mechanics that challenge and defy human physical intuition based on the Newtonian mechanics of classical physics. These aspects include: quantum entanglement, quantum nonlocality, quantum superposition (Schrödinger's cat), the uncertainty principle, wave-particle duality, the probabilistic nature of wave function collapse.

Quantum entanglement is the phenomenon that occurs when a group of particles are generated, interact, or share spatial proximity in a way such that the quantum state of each particle of the group cannot be described independently of the state of the others, including when the particles are separated by a large distance. The topic of quantum entanglement is at the heart of the disparity between classical and quantum physics: entanglement is a primary feature of quantum mechanics that is not present in classical mechanics.

Quantum nonlocality refers to the phenomenon when observers can produce instantaneous effects over distant systems. Non - local theories rely on two fundamental effects: local uncertainty relations and steering of physical states at a distance. Quantum nonlocality has been experimentally verified under different physical assumptions. Quantum nonlocality is a property of the universe that is independent of our description of nature.

Quantum superposition is a fundamental principle of quantum mechanics. It states that any two (or more) quantum states can be added together (superposed) and the result will be another valid quantum state; and conversely, that every quantum state can be represented as a sum of two or more other distinct states.

The uncertainty principle (Heisenberg's uncertainty principle) is any of a variety of mathematical inequalities asserting a fundamental limit to the accuracy with which the values for certain pairs of physical quantities of a particle, such as position, x, and momentum, p, can be predicted from initial conditions.

Wave–particle duality is the concept in quantum mechanics that every particle or quantum entity may be described as either a particle or a wave. It expresses the inability of the classical concepts particle or wave to fully describe the behavior of quantum-scale objects. This concept was challenged by Tesla describing photons as particles creating waves in a sea of energy, the ether.

Wave function collapse occurs when a wave function initially in a superposition of several states reduces to a single state due to interaction with the external world. This interaction is called an observation and is the essence of measurements in quantum mechanics, which connects the wave function with classical observables such as position and momentum. Collapse is one of the two processes by which quantum systems evolve in time; the other is the continuous evolution governed by the Schrödinger equation.

Schrödinger equation is a linear partial differential equation that governs the wave function of a quantum-mechanical system. It is a key result in quantum mechanics. Conceptually, the Schrödinger equation is the quantum counterpart of Newton's second law in classical mechanics. Given a set of known initial conditions, Newton's second law makes a mathematical prediction as to what path a given physical system will take over time. The Schrödinger equation gives the evolution over time of a wave function, the quantum-mechanical characterization of an isolated physical system. Paul Dirac incorporated matrix mechanics and the Schrödinger equation into a single formulation. When these approaches are compared, the use of the Schrödinger equation is called wave mechanics.

Calculations of quantum decoherence show that when a quantum system interacts with the environment, the superpositions apparently reduce to mixtures of classical alternatives. An example of a physically observable manifestation of the wave nature of quantum systems is the interference peaks from an electron beam in a double-slit experiment. The pattern is very similar to the one obtained by diffraction of classical waves.

According to Heisenberg's uncertainty principle, you cannot measure the position of an object without disturbing its momentum in an unpredictable way. Classical physics fails to account for this phenomenon which serves as a prime example of quantum weirdness in action.

The EPR paradox, named for Albert Einstein, Boris Podolsky and Nathan Rosen, supplies an even stranger example of quantum weirdness, in which two subatomic particles thousands of light-years apart can instantaneously respond to each other's motions. This phenomenon is called entanglement, at the particle level. We are looking at what seems faster than light signaling which challenges Einstein's relativity. Bohm proposed that quantum weirdness is the result of underlying subquantum forces and particles. We should be cognizant that our understanding of this minute level of reality is incomplete. An interpretation of quantum mechanics is provided by the Copenhagen interpretation (William, 2017).

Quantum Realm: Dimensions (Changes in Frequency and Vibrations)

A dimension is a measurable extent of some kind, such as length, breadth, depth, or height. Dimension is the most elementary characteristic of both physical matter existence and non-material ether existence. We are accustomed to thinking that reality is the physical world we perceive. Dimension is the fundamental attribute of measurement but is not itself measurable. There are four commonly known, fundamental dimensions of measurement: mass, charge, length, and frequency. In our macro frame of reference, we prefer to speak of frequency in terms of its reciprocal of time. Also, at the quantum level there is a fifth type of dimension. We are 3D creatures, living in a 3D world but our eyes can show us only two dimensions.

In our reality mass cannot be converted to energy because mass is a dimension at one level of reality, and energy is a unit made up of dimensions at a different level of reality. According to the Heisenberg uncertainty principle, we are not capable of grasping reality in its entirety; we can only witness one of its possibilities at a time. This particular aspect is due in part to our senses that have three-dimensional limitations. The senses enable us to perceive only impressions. We deal with a world of representations suggested by the senses and the imagination, not a sound foundation on which to base dogmas and doctrines. So, we ignore what we cannot perceive. A vortex is like a door between dimensions. It facilitates information exchange. The world as we know it has three dimensions of space: length, width, and depth and one dimension of time. However, in physics, the current leading theory that explains all of the atomic particles and all four fundamental forces in nature is called supersymmetric string theory proposes the existence of more dimensions. According to the superstring theory it brings the possibility that many more dimensions exist. According to string theory, the universe operates with 10 dimensions. An 11th dimension may exist and is a characteristic of space-time that has been proposed as a possible answer to questions that arise in superstring theory. Basically, a change in dimension is a change in vibration and frequency.

Quantum Realm: Space (Ether)

Space is defined as the unlimited or incalculably great three dimensional realm or expanse in which all material objects are located, and all events occur. In modern physics, space is a boundless four-dimensional continuum known as spacetime.

Space is not a container; Space is contained by the very energy that propagates through it. We give space-time a name to differentiate it from the concept of a void of nothingness. Maxwell's physics suggested that space is occupied by a light-conducting medium, which he called the "ether." This concept is so relevant that may give rise to the Grand Unification Theory of Forces by unifying the four known interactions, or forces: the strong, electromagnetic, weak, and gravitational forces. Using the principle of reductionism, the forces are unified by a simple set of general laws explainable by the fabric of space-time itself. Space exists in time, so maybe it should be time-space. Time should be a dimension before space.

Quantum Realm: Time (Physical Dimensional Perception)

Time is defined as the indefinite continued progress of existence and events in the past, present, and future regarded as a whole. Time is the frequency of longitudinal energy waves. We perceive time as normal and frequency as reciprocal because we move only in the forward dimension of time. Since all subatomic matter pulses to the same rhythm in forwarding time, time appears linear to our perception. In general, we can see only three dimensions of space and one dimension of pulsed, linear time. the perception of time is bound to our senses.

Two of the anomalous aspects of energy medicine, independence of time and of distance, are also observed in quantum effects. There is a hierarchical series of networks and domains in which quantum effects are transmitted to molecules through their electrons, with molecules transferring this information to cells, and so on until the intact organism is involved and influenced by quantum effects.

The direction of time is from the lower to the higher entropy. In quantum terms, space-time are a single entity which seems to be a projection of a higher dimensional reality. Time is the fourth dimension. Time is an illusion since our perception of its flow does not correspond to physical reality. Time emerges in the thermodynamic context, but it is an illusion born of our incomplete knowledge; it is not something that exists objectively. Time is a derived concept, related to a directional progression or movement we perceive in our physical limited dimension.

Humans as photoheterotrophs (Sayer Ji's concept)

Sayer Ji is a modern philosopher of biology with a deep understanding of intrinsic, complex and synergistic physiological interactions. He has developed many paradigm changing concepts in biology.

Our perceptive abilities have limitations, these limitations often pervade western science. Reality is limited by our ability to conceive its possibilities. Life develops through information networks capable of self-regulation and self-organization all dependent on organized energy.

Sunlight is the most abundant energy source on this planet. However, the ability to convert sunlight into biological energy in the form of adenosine-59-triphosphate (ATP) is thought to be limited to chlorophyll-containing chloroplasts in photosynthetic organisms. Here we state that mammalian mitochondria can also capture light and synthesize ATP when mixed with a light-capturing metabolite of chlorophyll.

We may be capable of taking up chlorophyll metabolites into the mitochondria, enabling them to use sunlight energy to increase the rate (up to 35% faster) and quantity (up to 16-fold increases) of ATP produced within the mitochondria. Light-harvesting chlorophyll pigments enable mammalian mitochondria to capture photonic energy and produce ATP. Animals in general are not just glucose-burning bio-machines but are light-harvesting hybrids. Chlorophyll-type molecules may modulate mitochondrial ATP by catalyzing the reduction of coenzyme Q, a slow step in mitochondrial ATP synthesis. Subsequent photo-energization of the electron transport chain will naturally reduce (donate electrons) ubiquinone converting it into ubiquinol, which will result in increased ATP production and efficiency (Sayer, 2020).

Green vegetables and their juices should no longer be viewed simply as sources of antioxidants, vitamins, nutrients, minerals, etc., but carriers of essential mitochondrial cofactors that can optimally and efficiently produce ATP, and without which our body can not realize its biological potential for maximal health and longevity. Moreover, they are also indispensable regulators of gene expression. All are ruled, guided, and directed by energy.

Quantum Philosophy: Scientism (Materialism) vs Vitalism (Energy)

Scientism is the reductionist position that affirms the universal applicability of the scientific method and approach and the idea that empirical science constitutes the most authoritative worldview or the most valuable part of human knowledge and excludes any other points of view. It has been defined as the position that the methods characteristic of the natural sciences is the only source of genuine and factual knowledge. The term scientism often implies dogmatic support for the scientific method and the reduction of all knowledge to all that is measurable. Scientism can refer to applied science taken in excess, unbalanced, reductionist manner. The term can indicate the inappropriate use of science or scientific claims. Historians, philosophers, and cultural critics have used it to highlight the potential dangers of falling into excessive reductionism in all fields of human knowledge. Roughly, scientism is the view that the hard sciences like chemistry, and physics provide the only genuine knowledge of reality. At the very least, this scientific knowledge is vastly superior to what we can know from any other discipline. Scientism states that life obeys the laws of chemistry and physics and that it is totally explained by those laws. According to scientism, science is the only way of knowing what's true or real. If something has not been verified by science, we cannot say it is true or real. Scientism underestimates or better yet does not recognize and tries to invalidate Vitalism.

Vitalism is a belief that starts from the premise that living organisms are fundamentally different from non-living entities because they contain some non-physical, multi- dimensional element or are governed by different principles than are inanimate things. Where vitalism explicitly invokes a vital principle, that element is often referred to as the vital spark, energy, odic force, biological intelligence or life force which some equate with the soul or spirit. Vitalists argued that the processes of life could not be reduced to a mechanistic process. Vitalism has a long history in medical philosophies: many traditional healing practices posited that disease results from some imbalance in vital forces.

Vitalism (energy force) states that life cannot be explained by classic chemistry and physics and that there is a life force from the laws of nature that distinguish living from non-living. The idea that everything is connected energetically is the foundation of the principle of holism. Vitalists believe in the body's innate ability to heal itself. Vitalists see the bioenergetic field as a holistic living force that goes beyond reductionist physics and chemistry, more so into the quantum realm.

It is important to be cognizant of he unrecognized limitations of contemporary scientific thought. In particular the scientific dogmatism that leads to the illusion of knowledge. As presented in The science delusion of Rubert Sheldrake (Sheldrake, 2012).

Energy and Healing: Back to the Future

There are at least three theories as to the underlying mechanisms giving rise to the effects of energy medicine:

1. The biofield hypothesis.
2. Placebo effects .
3. Quantum entanglement.

The biofield or vital force as mentioned before is a useful construct consistent with bioelectromagnetics and the physics of nonlinear, dynamical, nonequilibrium living systems.

In relation to the placebo, if patients actually experience healing and/or feeling better, then something really is happening consciously, physically, and metabolically.

It is possible that the most fundamental aspects of energy medicine have their explanation and source in quantum physics. Linus Pauling himself used quantum mechanics to deal with many issues related to molecules and in understanding the chemical bond, as well as Szent- Györgyi in his research interest in cancer that developed ideas on applying the theories of quantum mechanics to the biochemistry of cancer (quantum biology).

"In every culture and in every medical tradition before ours, healing is accomplished by moving energy"
Albert Szent-Györgyi

Quantum theory, Entanglement, and Consciousness

Quantum theory is the theoretical basis of modern physics that explains the nature and behavior of matter and energy on the atomic and subatomic levels. The quantum theory and generalized entanglement, demonstrate that, mathematically at least, transfer of information between consciousnesses in a nonphysical way is possible.

Entanglement is a bizarre, counterintuitive phenomenon that explains how two subatomic particles can be intimately linked to each other even if separated by billions of light-years of space. Despite their vast separation, a change induced in one will affect the other. One possible explanation for entanglement would allow for a faster-than-light exchange from one particle to the other. Entanglement may not operate inside normal time and space boundaries. This theory of quantum structure unifies all physical existence as well as certain aspects of consciousness.

The term consciousness is used in several ways. In general, consciousness refers to being in a state of total awareness or perception. Consciousness is one form of energy. In this article, we define consciousness as the highest level of energy (which we call the Gamma state, Nirvana, Heaven, or Moksha). Consciousness as a physical process is caused by the organization of Energy in the Brain. Consciousness increases the likelihood that an organism will direct its attention to whatever is most important for its survival. Consciousness is in an entangled state with the physical universe. In that sense, quantum information can exist outside the body.

Conclusion

In science, it is a risk to propose novel ideas that challenge conventional positions and accepted "dogma". Conventional western medicine is the only healthcare system in the world that does not recognize the bioenergetic system. Quantum physics entertains the possibility of unifying all these concepts that we have addressed herein.

Correcting the energetic system is about making sure communication takes place properly throughout the body so there is a coordinated, organized and ordered effort in running such a diversified and complex system. A wide variety of electrolytic charge transfer, donor-acceptor, semiconductive and redox reactions are taking place within an organism at any given time. Some of these processes involve ionic conduction; others involve charge transfer in and along the molecular fabric of the body, the living matrix, via semiconduction, quantum mechanical tunneling, resonant transfer, solitons, and related processes.

The second law of thermodynamics tells us that entropy must always increase. In terms of quantum physics, as the universe expands and entropy or chaos increases, so does information; and with information comes structure, purpose and organized or structured energy this combines to produce the beauty and complexity of life. The fourth principle of bioenergetics states that information opposes entropy. Information takes the chaos of random flows of energy and organizes it. Information is the reason all the energy in the body is held together. Information provides coherence, communication, and efficiency. When information is compromised, coherence, communication, and efficiency decrease. Chaos rises leading to what we know as disease.

There are other patterns of energy and information outside of our perceivable senses. Those that we are able to perceive represent only a very small percentage. Music and sound therapies may affect and regulate the body similarly, through phonons, the equivalent particles of acoustic energy that transmit though the living crystalline matrix of the body.

This manuscript's goal is to help fulfill an important gap in biology and medicine with the concept of energy. This use of energetics must be approached with open mind consideration and an understanding of the quantum realm. We truly believe that it has the potential to improve the treatment of diseases that are not responding to current conventional clinical methods. The healing process involves many kinds of communication, we are addressing a very important but obviated one in energy. Einstein said: "The field is the sole governing agency of the particle" (Einstein 1955). The field is the only reality, and this is transient and illusory. Quantum physics provides the scientific framework for understanding the interconnectedness of life-giving birth to Quantum Biology and this in turn gives rise to the Bio-Orthophotonic Concept, the quantum version of Orthomolecular Medicine. Health is a state of perfect subatomic communication, and disease is a state where communication breaks down when our waves are out of synch and particles are dispersed (non-coherent). Quantum weirdness equals biological logic…

"If you want to find the secrets of the Universe, think in terms of energy, frequency, and vibration."
Nikola Tesla

"What we observe as material bodies and forces are nothing but shapes and variations in the structure of space. … Quantum wave structures are real and material particles are not."
Erwin Schrödinger

"May the Force be with you…"
Hans Solo to Luke Skywalker in Star Wars

Dedication

To the memory of a great teacher, physician, and human being and especially an out-of-the-box thinker, Dr. Angel Roman Franco, MD…Distinguished Professor of Medicine, University of Puerto Rico, Medical Sciences Campus, School of Medicine and Dr Hugh D. Riordan, our mentor and pioneer in Orthomolecular Medicine and subtle energies.

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