AN ESSAY ON ENERGIES
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This paper was inspired by the late Nick Carter DO MBRA SMTO
after his Energies lecture to his Advanced Remedial Massage students on 20th October 2001.

Philosophers, Scientists, Healers and Therapists.

Philosophers
Mathematician and Philosopher, Jacob Bronowski (1908-74), in his book “The Origins of Knowledge and Imagination”, wrote “I believe that the world is totally connected: that is to say, that there are no events anywhere in the universe that are not tied to every other event in the universe”. Two sentences later, to reinforce his point, he repeats the same statement. Bold sentiments, indeed, came from one who was, and remains, revered by the past and present day scientific communities.

Leonardo da Vinci (1452-1519); Galilao Galilei (1564-1642); Christiaan Huygens (1629-95); Isaac Newton (1642-1742); Guttfried Lebnitz (1646-1726); James Clark Maxwell (1831-1879) Ludvig Boltzmann; (1844-1906); Nikola Tesla (1856-1943); Max Plank (1858-1947); Albert Einstein (1878-1955.

These visionaries had one thing in common…imagination.

However, all have had to battle for recognition of their ideas, theories or hypotheses of phenomena they have perceived or observed. Of Newton's theories on universal gravitation, Huygens commented, "…. appears to me, absurd." Boltzman surrendered to suicide on account of deep depression when he failed to persuade the scientific community of his day to accept his ideas on atomic structures. Ironically, shortly after his death, experimentation verified his work.

Further controversy reigned at the turn of the 20th Century when Einstein published his theories of relativity. New concepts, described as Quantum Physics, threatened the long established Newtonian Physics and Maxwell’s Equations relating to electro-magnetic radiation. Battle lines formed between wave theory and particle physics.

However, it is of interest to note that while Newton perceived a universe of interacting solid masses and wave mechanics, he also perceived "light" in the form of packets of energy, which he named, "corpuscles". The theory, which supports quantum physics, makes this same hypothesis, but across the entire electro-magnetic spectrum.

The model of an atom, proposed by Neils Bohr (1885-1962), suggesting electrons looping in an orbit around a nucleus, is now out of date and a current view considers the location of electrons, relative to the nucleus, subject to statistical probabilities.

Scientists
Authorities and institutions in the industrial communities, have all demanded “scientific” proof of unexplained phenomenon before recognising, or sometimes even acknowledging, its existence. This has to be achieved through either mathematical proof or by independent experimental validation. However, mathematical modeling is limited by the mathematics of the day, which has been developed so far, on this planet. Validation is also limited by the sensitivity, noise and bandwidth performance of sensors and experimental measuring apparatus.

It could be argued restrictive, perhaps even arrogant, to insist upon only accepting ideas and hypotheses of universal phenomenon based on terrestrial terminology, as understood or interpreted at any given point in time, by a community of individuals who’s lifespan is relatively short. The judiciary considers what evidence is “reliable and credible” when judgements are made on criminal misdemeanors. If evidence had to be tested and proven by mathematics or by experimentation, how many more villains would there be at large?

Newton observed a macroscopic world of physical bodies interacting with each other. Einstein, and others of his time, theorised a microscopic world made up of “relativistic” masses (particles which could be described as energy equivalents) and “mass-less” energies like photons, x-rays and gamma rays.

Surgical medicine could be described as having a basis in Newtonian Bio-mechanics, where anatomical body parts are repaired, replaced or removed. This technique, while providing a “fix” does not fully explore the reasons why the dysfunction existed in the first place. Molecular biologists, on the other hand, operate at the cellular level, moving towards perhaps a term we could coin as, “Quantum” Biomechanics. Here they study how chemical compounds react with tissues and organic cells, to enhance a defective immune system or destroy foreign bodies. Months or years of testing are carried out to minimise secondary effects of these drugs.

Examples of Quantum Biophysics in Hospitals.
There are examples where “conventional” medicine embraces the fundamental concepts of quantum physics. Nine Wells Hospital in Dundee is one of two centres of excellence for light treatment applied to dermatology (Photobiology). Here they employ a variety of different ultra-violet wavelengths to dampen down the inflammatory response to certain dermatological conditions. Lasers (coherent energy at specific frequencies or wavelengths) are also used to destroy cancer

cells that have been “doped” with other chemicals. These chemicals react only with cancerous cells and the resultant bio-chemical structure is destroyed by coherent laser energy at a specific and critical wavelength. The healthy cells are not affected by the laser energy.

X-ray energy is electromagnetic and can be perceived in the same form as infrared or ultra violet radiation. The difference is wavelength/frequency. X-rays are higher in frequency and therefore, in accordance with quantum physics (see below), their photons have a higher energy than IR or UV radiation. These higher energy levels are such that they can penetrate soft tissue but are reflected or absorbed by denser tissue like bones or some organs.

Gamma rays are higher still in frequency, with a proportionate increase in energy per photon. They can penetrate into deep tissue, including bone. They are produced by the sun but get absorbed in the earth’s atmosphere before reaching sea level…probably! Gamma rays can be harmful to human tissue. Higher energy cosmic radiation “probably” does not reach sea level either. However, what if some of these photons do get through and penetrate deep tissue. Can we be certain that such events do not cause or trigger pathological dysfunction, like cancers – other than melanoma!

Exploitation of Quantum Biophysics in Dentistry.
Mechanical tooth drills and extraction pliers represent examples of Newtonian biomechanics in dentistry. Infrared lasers are now being used to cut away soft gum tissue. These lasers have been found unsuitable for drilling teeth, since the energy required doing so dissipates excessive heat in the tooth, causing cracks and surrounding tissue damage. However, UV lasers with shorter wavelengths can offer a very efficient drilling process, generating almost no heat at all. What is the difference? ….Frequency (or wavelength). Perhaps the tooth material resonates with the wavelength of the UV light and destroys it, rather like the opera singer breaking a wine class with a high "C", or the Tacoma Bridge resonating itself to destruction, stimulated only by a relatively low energy wind vector.

Healers
Can it not be said that peoples in other, less scientifically advanced communities have survived to respectable old age without the benefit of sophisticated western health technology? It is unfortunate that human health care developed, over centuries, by “non-scientific” communities does not receive recognition or merit from the medical establishment in some western countries. Techniques or "potions" which do not stand up to the rigours of costly present – day terrestrial scientific scrutiny, tend to be rejected. In the west, particularly the UK, authorities demand that “peer” groups, comprising of recognised experts, endorse whatever principal, theory or hypotheses are put forward to explain natural (or otherwise) phenomena. Does this not perpetuate the same frustrations endured by philosophers through the ages? Limited resources, coupled with personal interest and political infighting have so far been successful in excluding alternative, complementary and arguably more cost-effective treatments for some people with common complaints.

Healers from many different communities and cultures frequently express **energy** as being their instrument of healing. They declare that energies are “channelled” through the healer to the patient. The source of energy is sometimes described as “universal energy” or “super-consciousness” but always as a source of energy. Some individuals claim that they are able to “tune-in to ” or “tap into” to this energy source. Such individuals were likely burned at the stake, not too long ago. Even in these technically advanced times, the form of energy which creates “supernatural phenomena” has not been defined in terrestrial mathematical terminology, or measured by a spectrometer, photon detector or Geiger counter.

On the other hand, it is generally accepted that homing pigeons, salmon and other mammals navigate by geo-magnetic fields. In spite of this, man has not yet been able to successfully harness this capability in the form of navigation equipment and continues to rely on geo-stationary satellites or inertial platforms.

Some healers also employ colours or crystals, which have a variety of resonant frequencies. The colours we perceive are in the visible band 300nm (Blue) to 700nm (Red) wavelength. These wavelengths are relatively long and do not produce the high levels of tissue penetrating energies obtained from X-rays or Gamma Rays. However, quantum physics is based upon statistical probabilities of events occurring and therefore penetration of low frequency energies deep into tissue (and the all important pineal gland) is at least statistically possible. Close your eyes and look at a light bulb to test the theory. Intercellular communication may also play a part. It is well known that flashing lights can initiate migraines or fits. Sensitivity of tissue cells and their response to low level random energy levels are probably not understood, however, references to interesting research into this field can be found in the publication “Vibrational Medicine for the 21st Century”.

Therapists
The Oxford dictionary defines “Therapy” as “ the treatment of Physical or Mental disorders, other than by means of surgery”. This provides a quite a range of options. However, for the purposes of this paper, focus will be on those therapists who actively exploiting energies in the context on this paper.

Light Energy Therapy.
The use of UV and Lasers in the NHS has already been discussed. However, there are references to light treatment dating back to the time of the ancient Greeks and Romans who used sunlight in the treatment of skin disorders. In 1890, Nobel Prize winner Dr Neils Finsen reported he could heal skin lesions caused by smallpox and German measles by using RED and INFRARED Light treatments. Dr Peter Mandel has developed an entire healing approach for rebalance of the endocrine system by stimulating accupoints and meridians using a technique he calls “Colourpuncture”. In the UK, Pauline

Wills combines light therapy with her reflexology and has developed a "light pen", with detachable heads, which will filter through specific wavelengths. The pen is applied to the reflex points of the foot and other reflex points. The hypothesis is that the meridians behave like fibre optic communication links signalling and stimulating various organs of the body, which are colour (or frequency) sensitive.

Magnetic Fields Therapy.
Although not classified as energy, magnetic fields play a significant role in the health and well being of mammals. Magnetic fields strongly influence electrical current flow as well as energy fields. Television tubes, computer monitors, electric motors, generators etc. would simply not work, otherwise. Consider the electrical signalling and impulses, which control functions of the body, exposure to a high magnetic field and brain or neurone damage could occur. Is it not so that regular exposure to magnetic resonance scanning imagers (MRI) is not recommended? On the other hand, it has been demonstrated over centuries that the use of low level magnetic field strengths, have excellent therapeutic properties for a variety of complaints. The magnetic field will influence and stimulate electrical current flow in the nervous system due to its direct effect on positive ions such as potassium and calcium.

It is also generally accepted that electric fields, which accumulate an excess of positive ions, as occurs just before a storm, has a detrimental impact on human well-being. A feeling of airlessness or stuffiness results. Sufferers of arthritis or rheumatism claim they can "feel in their bones" that a storm is brewing. The plastic inner skin of an aircraft gets positively charged and attracts negative ions, or free electrons. There is an abundance of positive ions circulating in the cabin air. Compare this with standing on a beach with surf up or under a waterfall where there is an excess of negative ions.

Massage Therapy.
The benefits of massage are fairly well documented in physiotherapeutic and psychotherapeutic terms for both therapist and patient. However, a number of questions remain unexplained:

- The "intuitive" therapist who is able to "home in" on the likely cause of complaint with little or no symptoms.
- The therapist's sensation of energy, heat or "bio-plasm" in the hands when palpating or massaging.
- Why the same treatment may work for some but not others, some of the time, but not all of the time.

Conclusions
Would the "Holy Grail" of medical science not be the ability to exploit **safe** levels of energy at a frequency, or wavelength, specifically tuned to resonate with, or stimulate defective tissues or organs back to a healthy state?

These tissues, cells, molecules or atoms may require triggering or stimulating into action. Photons or quanta may be the key to many treatments other than those examples already mentioned. Is it totally unreasonable, or incredible, to imagine that healers may be transceivers of energies, who can "channel" such a stimulus?

The quest for health and well-being in all communities is universal, if not at least a terrestrial. While technological advances in scientific medicine is to be applauded, surely this should not continue at the risk of sidelining or ignoring therapies developed over the centuries by trial and error and passed on by each generation.

The concept of energy is a common "currency" between scientists, healers and therapists. Peer groups are set up to determine and judge, on behalf of the community they represent, what hypotheses are acceptable. The make up of those peer groups and to what authority they report is an issue requiring consideration. Otherwise, the health and well-being of populations may be unnecessarily compromised. Safety issues relative to the rapid build up of electromagnetic radiation the last 50 years has not been thoroughly evaluated or tested in relationship to humans – or animals. There is not an internationally accepted set of regulations or text, which guarantee no ill effects in exposure to electro-magnetic radiation. However, the practice of increasing electromagnetic radiation through communications and power generation continues at a faster pace than research into the understanding of energy effects on health or ill health.

Continued on page 27

"An Essay on Energies" continued from page 6

References:
Fundamentals of Quantum Mechanics:
Reference to the book, "Physics" by Resnick and Halliday

On Mass and Energy, Einstein wrote:
"Pre-relativity physics contains two conservation laws of fundamental importance, namely the law of conservation of energy and the law of conservation of mass; these two appear there as completely independent to each other. Through relativity theory they melt together into one principle."

$$\text{Energy} = \Delta mc^2$$

$$\textbf{Constant} = \sum (m_0c^2 + \varepsilon) \quad \textbf{or} \qquad 0 = \Delta\sum (m_0c^2 + \varepsilon)$$

Where $\sum m_0c^2$ equates to the *total rest mass* and $\sum\varepsilon$ is the total energy of *all other kinds*.

Perhaps the "Constant" as shown above, represents the total energy of the universe?
Proof of this idea, at any point one in time, would of course be impossible with known techniques. An interesting notion perhaps but with all the theories about black holes, anti-matter and positively charged electrons, maybe the total energy of the universe may indeed equate to zero!

The point to note, however, is the significance of the term **$\sum\varepsilon$, which** represents the total "mass-less" energy of **all** other kinds. A definition of what constitutes "all other kinds of energies" is not provided in the reference.

A relationship between Energy and Frequency.
Reference: Optoelectronics – Theory and Practice. By Texas Instruments

"Physical investigation and considerations on the phenomena of external photo-electric effect led to the recognition that radiation does not interact with matter continuously, but in small portions which cannot be further sub-divided, the so called quanta. Such a radiation quantum, also called a photon, corresponds to a certain amount of energy, dependent on the frequency of the radiation, which has a minimum amount for any given value of frequency. For the relationship between the energy and the frequency of a quantum of radiation, the equation:

$$\mathbf{E_{Ph} = h.\nu}$$

applies, where $\boldsymbol{E_{Ph}}$ *is the energy of the photon,* $\boldsymbol{\nu}$ *is the frequency of radiation and* $\boldsymbol{h}$ *= Plank's constant (*$6.62*10^{-34}$ *watts.sec*^{2}*). In the optical range, the amount of energy in the individual quanta is very small and beyond the limits of most conventional physical measurement methods.* ***All quanta arise from changes in energy in atoms and molecules****. The radiations that are of importance for opto-electronics have their origin in the outer electron orbits of the atoms. On the normal state, each electron is in the physically lowest possible level, where it has a certain amount of potential and kinetic energy.* ***By excitation processes, e.g. by the introduction of electrical, thermal or radiant energy, electrons can temporarily leave their basic state and occupy a higher level with a correspondingly higher energy content.*** *This state is not stable; therefore after a very short time the excited electrons fall back to their basic state,* ***while emitting a quantum of radiation****, the* ***frequency*** *of which, corresponds to the energy difference between the two levels."*

The point to note is that exposure of energy to different materials can give rise to change in energy state in molecules and atoms, which in turn gives rise to the emission of quantum energies at precise frequencies. Perhaps this is the basis for intercellular communication.

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