



The Science of the Vital App

Carlos Orozco BSc, MSc, ND, MD, PhD, FPAMS

The Vital App is based on a sound understanding of Quantum Mechanics and as Niels Bohr has stated...“If you are not astonished by quantum mechanics then you have not understood it”.

Abstract: The Vital App Company has created a mobile phone application known as the Smart App. The Vital App utilises a variety of nature's own harmonic frequencies. We have found these natural frequencies to be beneficial in harmonizing functionality as demonstrated by the renowned Biowell device. Positive responses have also been detected in body fluids. Fruity Juices, non-alcoholic and alcoholic beverages were also reviewed with positive results. Drinking water was also used as a medium for in-depth studies and was found to beneficially become crystalline and restructured. Ultra violet spectroscopy was performed in these samples covering the range of 200 to 800 nm and distinctive peaks at 277 nm were observed that confirm the existence of an exclusion zone (EZ) as proposed by Gerald Pollack. The Vital App is able to transfer spinning energy among living biological systems, and in doing so, it greatly contributes to improve the taste of beverages as well as improving cellular hydration and microcirculation.

Remark:

Due to the scientific nature of the Vital App it is imperative to review some background knowledge supporting the Smart App. Therefore this document has been divided into two sections. The first section deals with a simplified version of the science behind the Smart App. The second section deals with the complete science behind the Vital App that includes a historical background of Quantum Physics, Epigenetics, Vibrational Energy, Harmonic Waves and the Wave Equation in Three Dimensions. This is the knowledge that was applied to the development of the Smart App.

Section 1

Introduction:

The Vital App is embedded with nature's harmonizing frequencies and vibrations ranging from 256 Hz to 528 Hz; when the Vital App program is played, nature's own vibrational frequencies are transferred through the light and the sound waves emitted from any smart phone. Playing the Smart App, for a minute, over any cup or glass containing any liquid including water, Fruit Juice, alcohol or even beverages, the vibration of the Vital App is transferred and absorbed by the molecules within the matrix of these liquids. The vibrational frequencies create a distinctive improvement in the taste and flavor of the liquid. The molecular structure of EZ water confers the liquid phase a smoother texture with increased viscosity resulting in a noticeable change in surface tension. An increase in enthalpy or heat content has also been noted, which allows for the release of natural free energy¹. It is widely known that natural energy provides strength to muscles and tissues. This becomes evident through kinesiology testing.

The Smart App's frequencies have the capacity to harmonize vibrations from man-made electromagnetic non ionizing radiation emanating from WI-FI, radio waves, microwaves, smart phones, computers, etc. The Vital App frequencies induce harmony by attenuating the effect of the disturbing radiation emitted by electromagnetic frequencies (EMFs). Non-ionizing radiation refers to any type of electromagnetic radiation that does not carry enough energy per quantum (photon energy) to ionize atoms and molecules that is, to completely remove an electron from an atom and/or a molecule².

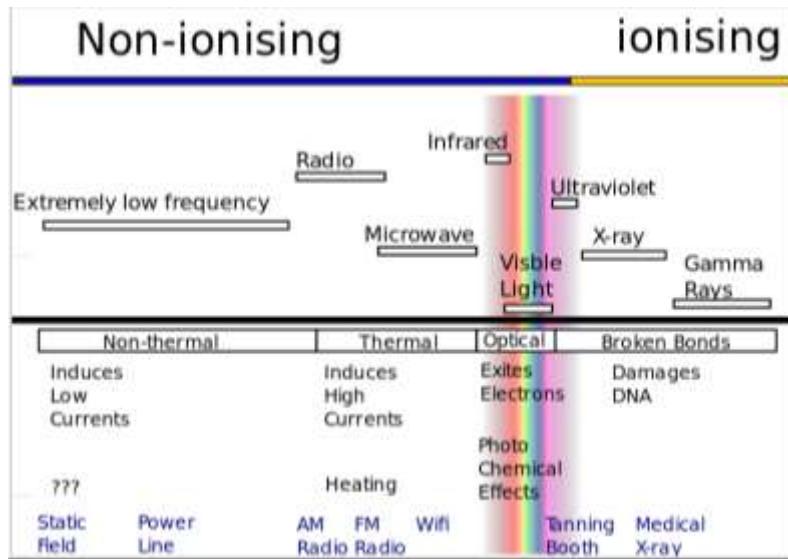


Figure 1. Electromagnetic Radiation. Non-ionizing and ionizing radiation are created from a variety of different man-made sources that make life very convenient and yet many reputable scientists suggest may cause harm^{3,4}.

Electromagnetic radiation and their derived frequencies (EMFs) are silent and invisible pollutants, which surround us in our daily lives. These invisible pollutants have become part of everyday life as we use the convenience of electrical appliances such as, TV monitors, computers, microwaves, WI-FI, GPS locators, Mobile appliances etc. The Vital App allows anyone to surround themselves with nature's own frequencies despite the presence of high levels of EMFs. It is imperative to understand that we live in a very chaotic electromagnetic environment^{3,4}. Modern life has brought us many conveniences but has also brought us a host of new electromagnetic frequencies that have only been recently introduced into the span of human time on earth. The advent of electric power transmission, overhead cables, radio waves, television waves, microwaves, wireless phones, Wi-Fi, computers, mobile phones and other electric appliances and devices of modern life have created a very chaotic electromagnetic environment^{3,4}. One can discover from a simple kinesiology muscle test that these invisible pollutants can have a detrimental effect on the human body.

Figure 1 shows the results of experiments conducted at the Hado Institute in Tokyo Japan that were done under the supervision of Hiro Emoto, son of the late Masaru Emoto, that show the effect of the Vital App on water before and after the Vital App was used. The images shown reflect the resulting water crystal after using the Vital App results in a hexagonal structure with angles of 120 degrees.

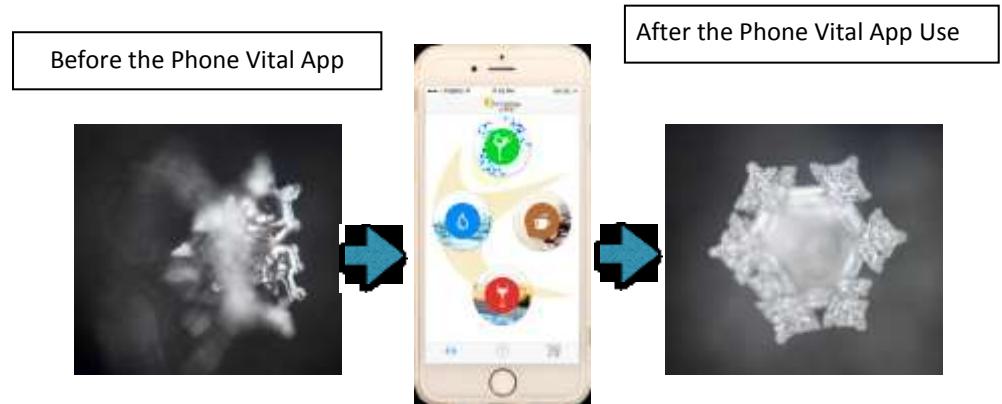


Figure 1. The Vital App created a bio-field within the non-structured 'dead' water; after the Vital App was played for 1 minute. One can recognise the resulting cluster becomes hexagonal and thus energized with ions.

According to Gerald Pollack, Professor of Bioengineering and his research team at the University of Washington, non-structured water otherwise referred to as dead water lacks what he defined as the exclusion zone (EZ)⁵. The EZ has been defined as the fourth state of water given by its gel like structure where the molecular structure of water becomes H_3O_2 carrying a negative electrical charge⁵. EZ water is therefore alkaline and thus maintaining this state of alkalinity and negative charge appears to be important for optimal health⁵. G Pollack proposed that water could be optimized in a variety of different ways, by injecting light energy or physical energy into the water by vortexing, for example. This is fairly easy using magnets. Reversing the vortex every few seconds may even generate more energy⁵. This is exactly what has been done with the Smart App.

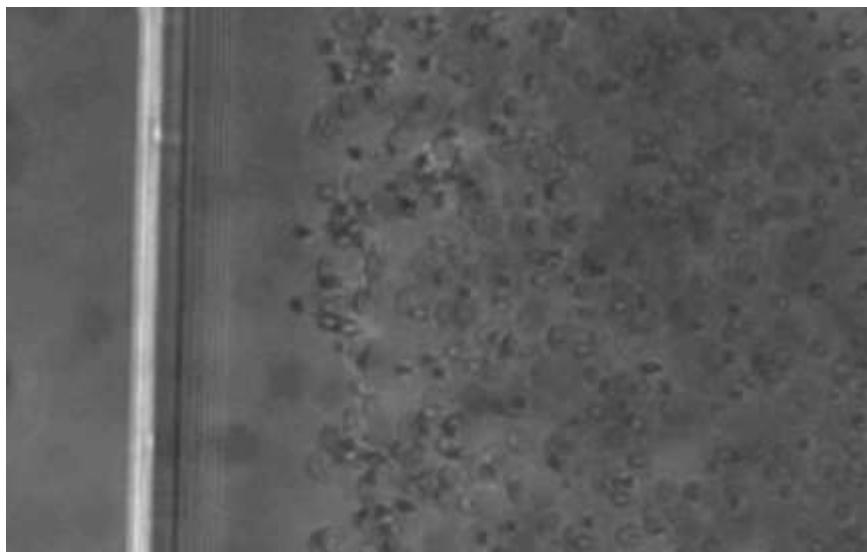


Figure 2. Exclusion Zone of water. This is an example of the exclusion zone (EZ) observed in G Pollack's laboratory at the University of Washington. The microspheres shown in the right side of the slide are repelled from the Nafion sheet on the left.

The EZ shown in figure 2 is structured water, which molecular formula is H_3O_2 and it has been referred to as the fourth state of water⁵ which is a gel like structure that seats between the solid and the liquid states of water. It also has been known as living water, bio-water and energized water. Spectroscopic studies at G Pollack's lab demonstrate that there is a distinctive peak of absorption at 270 nm, thus giving the characteristic spectrum of the EZ⁵.

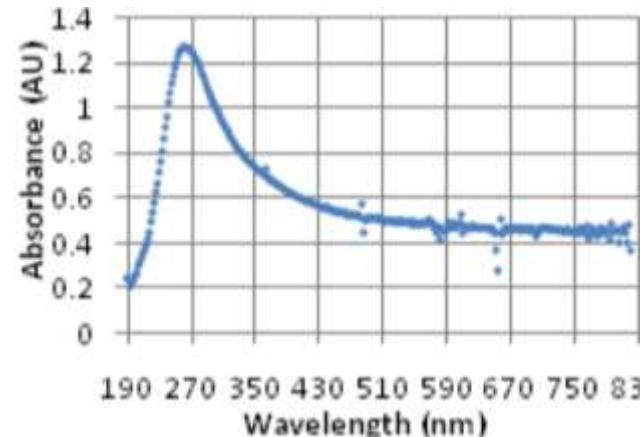


Figure 3. The signature wavelength of the EZ water. A distinctive point of absorption at 270 nm indicates that water restructures as H_3O_2 and thus becomes energized living water.

We have conducted spectroscopic experiments at the Molecular and Cellular Biology Department from the Burzynski Institute in Houston Texas with Dr Elwira Ilkowska Musial Director of Research, using a UV 160 Shimadzu spectrophotometer and scanning in the range of 200 nm to 800 nm, and have shown that when tap water is exposed to the action of the Smart App, a distinctive peak of absorption is shown at 277 nm pointing towards the existence of the EZ as proposed by G Pollack. This is of great significance as we can say that the App is able to induce the formation of an EZ as seen by the spectrum in figures 4A and 4B. Figure 4A shows the spectrum obtained from running tap water before the action of the Smart App, thus it becomes a negative control for the experiment that was repeated 4 times under the same room conditions. Figure 4B on the other hand, shows the effect of the Vital App after playing over tap water for one minute. As it can be seen a distinctive peak of absorption shows at 277nm. Thus the Vital App is able to convert non-structured 'dead' water into structured living water.

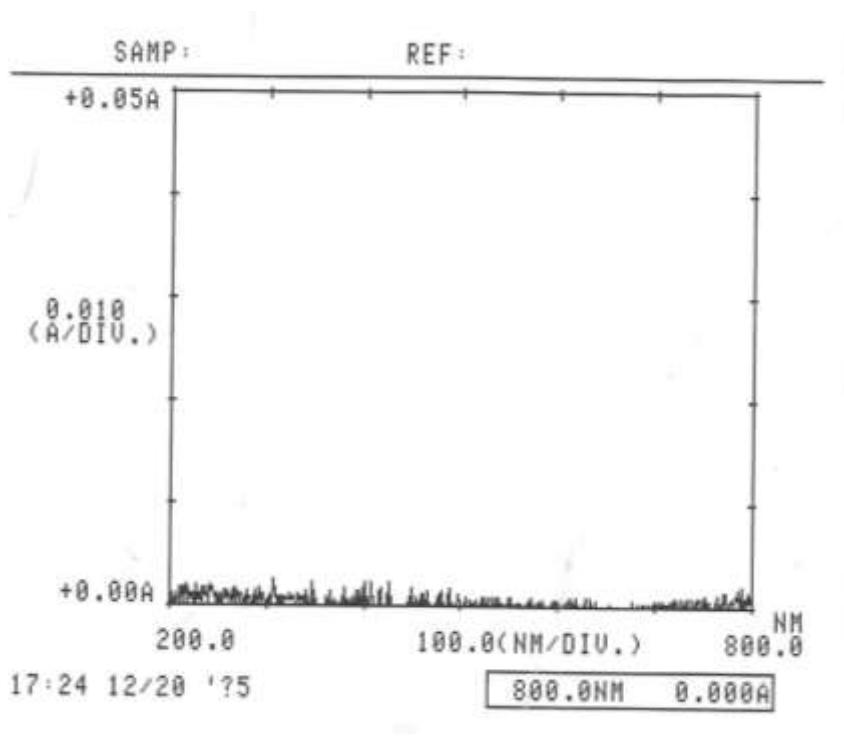


Figure 4A. Spectra obtained from tap water before the action of the Smart App. Water was collected from the tap at the lab and their spectrum was measured in the range of 200nm to 700nm. No significant peaks were observed.

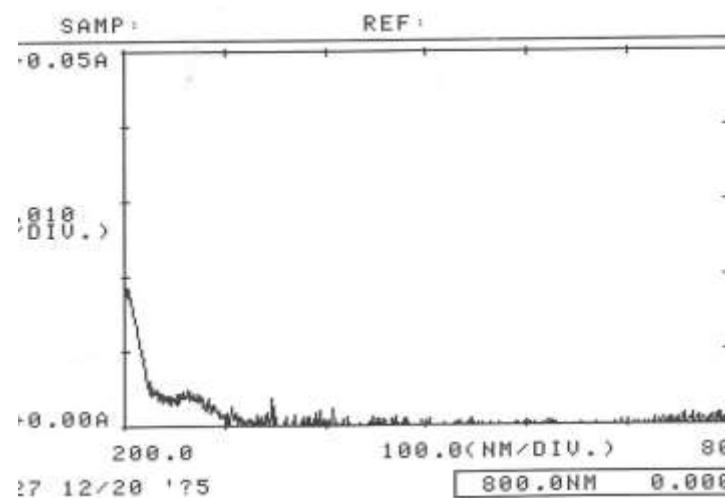


Figure 4B. Spectra obtained from tap water after exposure to the Smart App. Water was exposed for one minute to the action of the Vital App and a distinctive peak was observed at 270 nm, which matches with the presence of an EZ.

Based on these results we have can propose that, when water is exposed to the Vital App for just one minute, the frequency of the bio-field generated by the Water APP, allows for the angle formed by the atoms of Hydrogen of the molecule of water to open up from 104.5° to an angle of 109.5° allowing for the formation of a pyramid like structure, which allows for hexagonal clusters of water to be formed, as illustrated in figure 5. The molecule that makes this possible could well be the H_3O_2 structure as stated by G Pollack⁵.

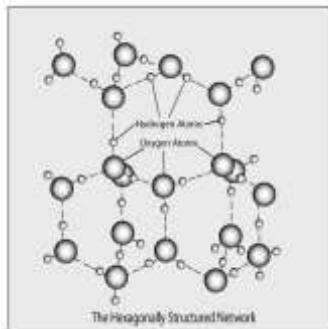
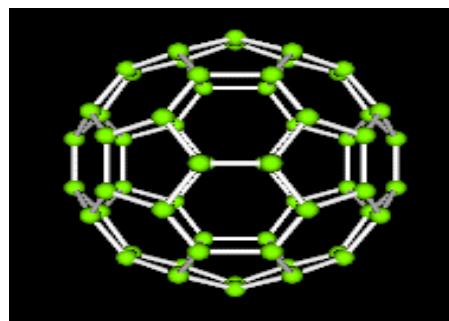


Figure 5. Representation of the water clusters formed with energized hexagonal water. The spherical shape shown is formed with 32 molecules of water, resulting in a truncated structure. To allow for a completely spherical structure another 5 molecules of water are required, resulting in a cluster made of 37 molecules of water. The resulting structure is highly energized and thus is known as living water, thus bio-water.

Water Structure

Normal “unstructured” water is known as H_2O . Molecular structure refers to the way molecules are bound together. Molecules are like building bricks, they can be placed in a variety of ways to form a wide variety of structures. Recent work by Prof. Gerald Pollack’s team at the University of Washington in the USA have demonstrated that the chemical formula for water is in fact H_3O_2 since a sole molecule of water does not exist as such due to the electronegativity of the atom of Oxygen and the inductive effect of the atom of Hydrogen. Therefore two molecules are needed to form molecular structure. Prof. Pollack’s team has also proven that structured water forms an exclusion zone (EZ) made of many layers of H_3O_2 water molecules⁵, as seen in figures 2 and 7.

Unstructured Water The Hydrogen Bond and the 104.5° Angle

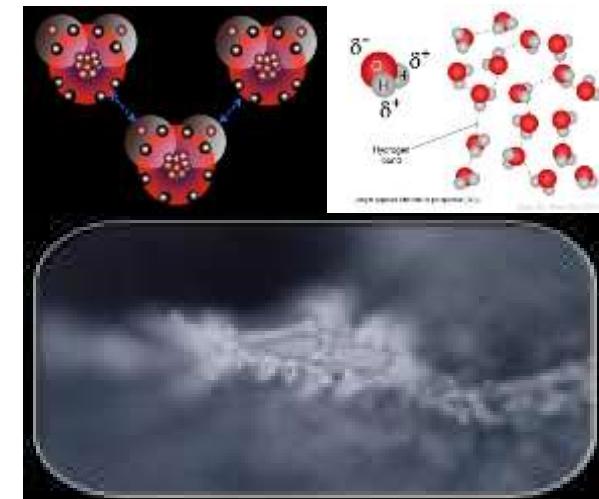


Figure 6: Crystal representation of the non-structured shape of the molecule of water showing the formation of the 104.5° angle and the resulting linear structure of the interaction of water molecules due to the Hydrogen bond that is formed among them.

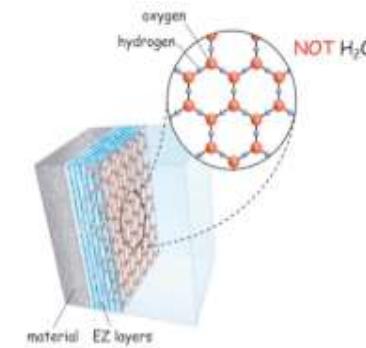


Figure 7. Hexagonal structured crystal sheet H_3O_2 molecular level. Structured Water forms (honeycomb) hexagonal sheets very similar to ice. Structured Water (liquid crystalline) is H_3O_2 . . . the fourth phase of water. It's a transition stage between liquid water and ice⁵.

The key to G Pollack's entire hypothesis lies in the properties of water⁵. The water molecules become structured in arrays or strata when they interact with charged surfaces such as those presented by protein as shown in figure 7. The cell's water is potentially structured. Water stays put in the cells because it's adsorbed into the protein surfaces. Structured water adheres to the cell's surface membrane glycoproteins such as aquaporins, a complex of 20 proteins that allow for water to cross the cellular membrane⁶.

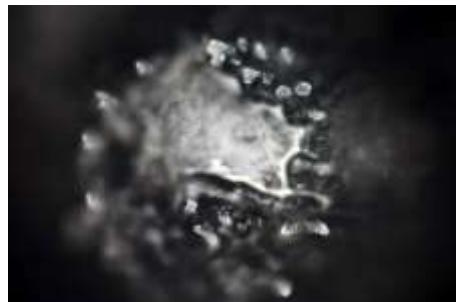


Figure 8. Water Crystal before being exposed to the action of the Smart App.
No structural water meaning no water crystals are seen before using the Vital App on the samples of water.



Figure 9. Water Crystals formed after exposure to the action of the Smart App.

The water crystals shown in figures 8 and 9 were obtained from experiments done at the Hado Institute in Tokyo Japan under the supervision of Hiro Emoto. Tap water was used and prepared for observation under dark field microscopy. The exposure to the action of the Vital App gave a series of hexagonal crystal structures as those shown in figure 9. Such structures did not form hexagonal structures without the action of the Smart App. We have enough evidence to say that the EZ of water is formed by the action of the Smart App. The density of EZ water is greater than that of Bulk non-structured water⁵. This has tremendous implications for cellular hydration and energy management by the cells. The speed of the particle is inter-dependant upon the information that it is carried in the form. Density of information is held within the shape of the water

molecules. The more information they hold the denser they become. The energy that the water absorbs from the Vital App allows for the formation of the water crystal structures seen in figure 9.

Since the Vital App also works in alcoholic beverages, it was of interest to do some spectral measurements testing on vodka. Figure 10A shows the negative control by simply obtaining a spectrum using vodka before it is exposure to the action of the Smart App.

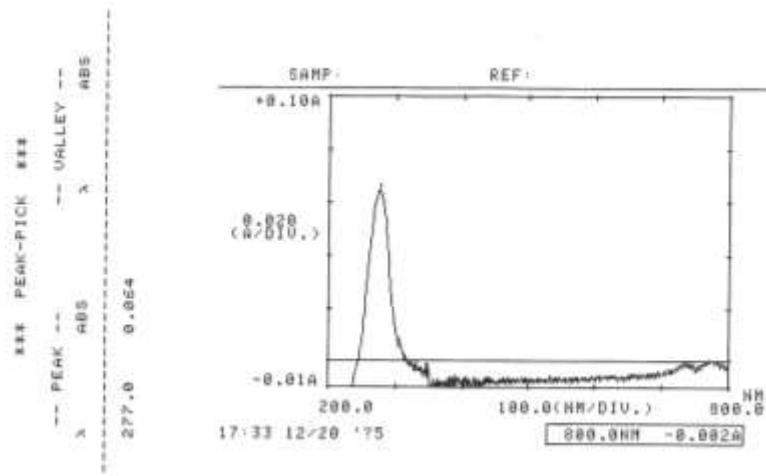


Figure 10A. Spectrum of a sample of pure vodka before the exposure to the action of the Smart App. A distinctive peak of absorption was observed at 277 nm showing similar spectral characteristics of the EZ.

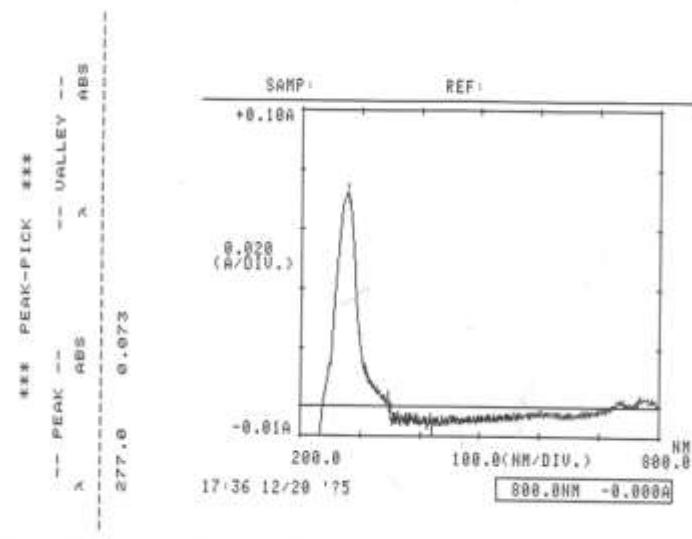


Figure 10B. Spectrum of pure vodka after one-minute exposure to the Smart App.

By pressing the alcoholic beverage bottom of the Vital App and applying its action for one minute over the sample of vodka, the spectrum obtained showed some interesting features compared to the one obtained as a control and shown in figure 10A. The peak of absorption in figure 10B is higher than that of the control shown in figure 10A. There is a shoulder that can be seen on figure 10B to the bottom right of the peak of absorbance that is absent in figure 10A.

One can only speculate at the moment, as more research is needed. So, we can say that the EZ, which is indicative of molecular restructuring, is present in the sample of vodka and it is enhanced through the action of the Smart App. We are approaching Gerald Pollack to discuss the design of experiments that will enable us to draw conclusions out of these observations.

What is evident is that the taste of the vodka significantly changes after being

exposed to the Vital App for just one minute. In all cases it becomes milder, almost to the point that its taste becomes non-alcoholic. This may be due to the possibility that the alcohol in vodka evaporates much quicker due to the action of the Smart App. More experiments are needed so that we can arrive to meaningful conclusions.

Effect of water Penetration in Cells

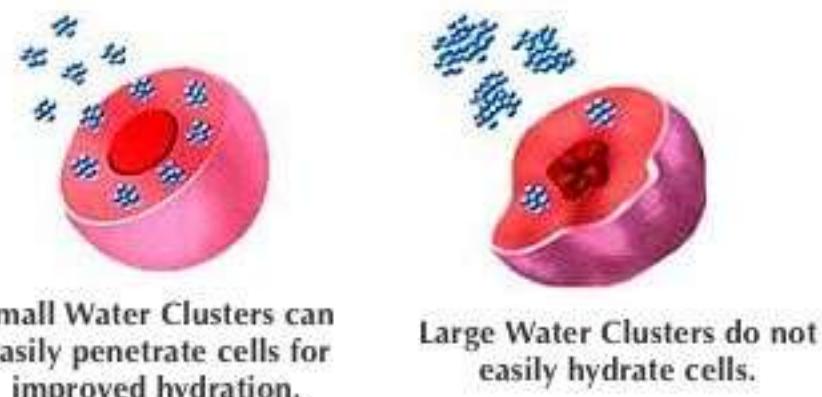


Figure 11. Hexagonally structured water results in small water clusters that are able to penetrate cell membranes allowing for improved cellular hydration.

The water function of the phone App allows for the formation of structural hexagonal water, which affects the surface tension of water allowing it to become wetter and in a sense, more permeable⁵, and thus its tissue penetration is significantly enhanced as shown in figure 11. In this way water does not accumulate in the intracellular matrix causing oxidative stress, thus free radical formation is avoided. This in turn could prevent kidney and gall bladder stone formation due to the hexagonal molecular structure of bio-energized water as it keeps the physiological pH within range. It is possible therefore that there is no need for the kidneys to form salts by leaching the

Zinc and Magnesium from muscle. This keeps the process of homeostasis in harmony and thus allows for wellness to rule over illness normally caused by oxidation and free radical formation.

Skin conditions induced by stress, among other causes, can be dealt with by simply spraying clustered structured bio-energized water directly onto the skin. The effect of the water function of the phone App on the ability of water to penetrate into the skin is greatly enhanced by the observed decrease in surface tension and the ability of the Vital App water to become wetter, allowing for improved hydration.

By placing the Smart Apps' 'water App' over a glass of water, the water becomes optimized and structured. Prof. Pollack's team suggests that when H_3O_2 water penetrates the lining of the stomach and the gut, it can go straight into the blood stream allowing for the removal of toxins as well as improving cellular hydration⁵.

We now have evidence to show that the water function of the Vital App enhances the physical properties of the water. Vital App energized water also has an impact on aging process since it does not cause oxidation, as normal water does. Therefore the science suggests that it is possible for people live longer and look younger than their chronological age³.

Harmonic Resonance

The basic principle of harmonic resonance is that in nature living systems will tend to adapt to the vibration they are receiving^{3,7}. Sounds can be seen as patterns in water as can the refraction of light on water. Tuning forks and clock pendulum are perfect examples. When a frequency or vibration is applied to any liquid it will adapt to that frequency⁷. When the Chi function of the app is applied to the body, a harmonizing frequency is emitted that the body's fluids responds to. Its response is to move from a chaotic state towards a more harmonious energetic state.

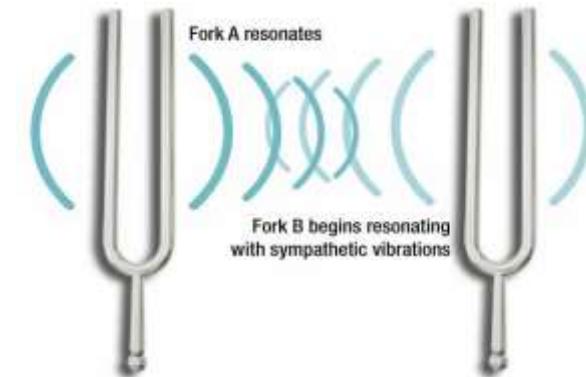


Figure 12. Tuning forks are a perfect example of harmonic resonance. When one tuning fork is struck, the other will vibrate in unison due to the vibrational waves sharing the same frequency.

Harmonic resonance occurs with the exposure of the Vital App when it is placed in the presence of liquids⁷ and solids. The emission of vibratory frequencies resonates between the Vital App and the system that it has been exposed to, allowing for the transmission of energy.

Furthermore, to test for the harmonizing effects of the Chi function of the App, we used the Biowell machine developed by Konstantine Korotkov, professor of Saint-Petersburg Federal Research Institute of Physical Culture in Russia. This device has received government certification as a medical testing device in Russia⁷. Test readings were taken from subjects before and after they were subjected to frequencies emanating from the Vital App when using the Chi function.

The Chi function of the App is applied directly to the body starting at in the

lower abdomen, where the genital area is found, and then moving it upwards and over the head and then down to the sacral bone, then the process is repeated starting at the sacral bone up to the head and then down to the genital area in the lower abdomen as shown in figure 13.



Figure 13. The Chi function of the Smart App. The chi function of the App is used by pressing the green bottom, and then moving the phone upwards starting at the base of the lower abdomen in the genital area towards the head and then down to the sacrum at the back. The up and down movement is repeated 4 times until the Vital App function stops.

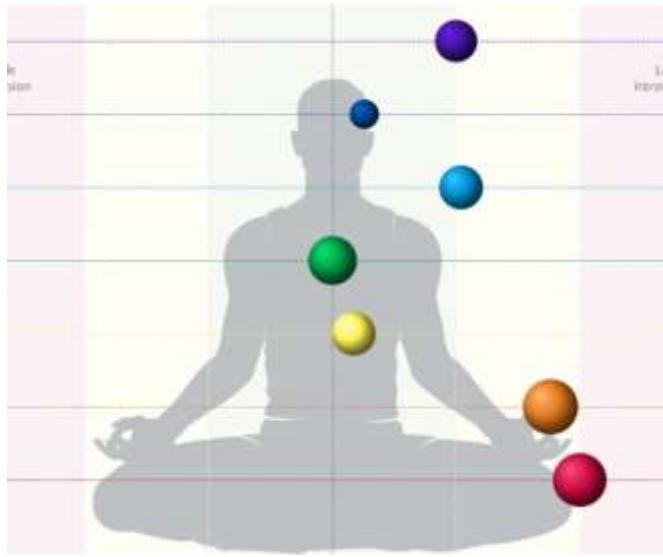


Figure 14A. The Biowell report from a test subject BEFORE being subjected to the Chi function of the App. Note the dis-placement of four of the spheres to the right from the center indicating disharmony.

Figure 14A shows the data from the Biowell device on a human test subject. The colored spheres represent the energy centers of the body and their relative strength and state of harmony. The size of the sphere represents the strength of the energy center and the position of the spheres represents the relative harmony of the energy center. When the energy center is in harmony, it is displayed in the center of the body image along the vertical axis of the graph. Figure 14A is from the test subject prior to receiving the harmonic bio-energetic frequencies from the Smart App.



Figure 14B. The Biowell report from a test subject AFTER being subjected to the Chi function of the App. Note that the majority of the spheres are now placed on or very close to the center axis of the graph, indicating a more harmonic state

Figure 14B shows the same report from the same subject after receiving the frequencies from the Chi function of the App. In this case the spheres are on or very close to the center axis of the graph, which indicates a harmonic state. Also the sizes of the blue spheres increased indicating that the relative strength of the energy centers increased.

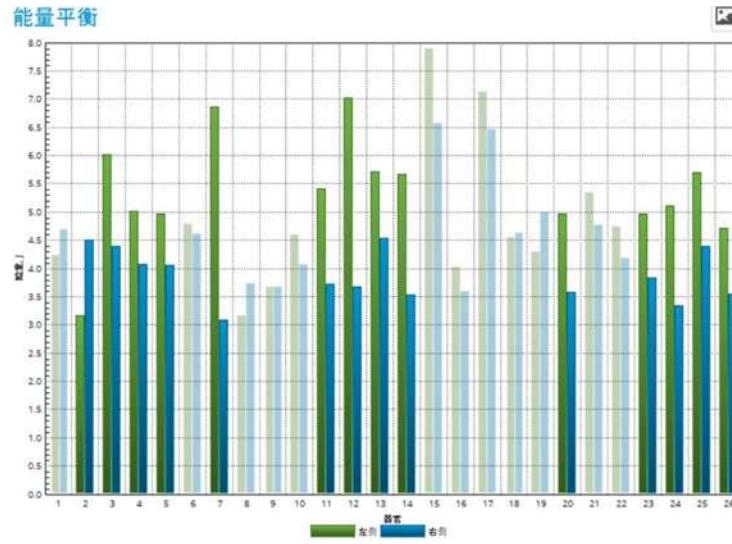


Figure 15A. The Biowell report from a test subject before being subjected to the Chi function of the App. Here the highlighted bar graphs indicated which areas of the body are out of balance relative to the height of the blue and green bars of the graph.

Figure 15A shows report data from the Biowell device indicating those areas of the body that are in an out of the harmonious state. The highlighted bars are the ones that show the relative balance between the two bars is higher than normal, indicating an out of harmonious state. Note that in this case the number of areas of the body that are out of harmony per this report is 14.

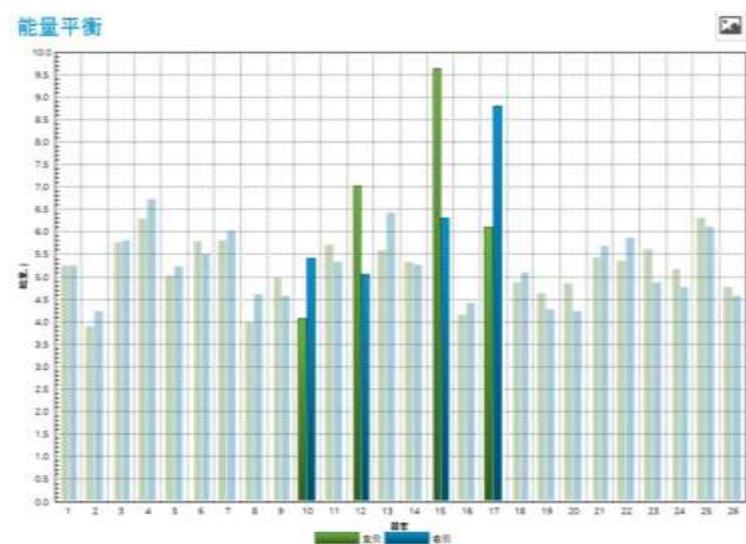


Figure 15 B. The Biowell report from a test subject before being Subjected to the Chi function of the App. Here the number of bars that indicate an out of balance state has been greatly reduced from 14 to 4, indicating a more harmonious state.

Figure 15B shows the same report after the test subject has received the frequencies from the Chi App. The numbers of bars that indicate areas that are out of harmony and have now been reduced from 14 to 4. Overall the test subject body is now in harmonious state.

Remarks Regarding Taste

In this section we address some common situations and questions that occur when using the App. Firstly, when using the Vital App on alcoholic beverages, nearly everyone notices a change in taste. The reason for this is that most man made fluids lose their original molecular chain during the industrial processing⁹. This is partially due to the straight 90° angles of the industrial pipelines. As the fluids are pulled and push through and against the internal wall of the tubular 90° ages, the resulting force damages their fine molecular structure and thus the molecular bonds known as the forces of van der Walls break away^{9,10}. This action results in a myriad of changes in the shape and size of the molecules formed as well as an increase in entropy¹. However when we use the frequency from the App, the original molecular chain structure of the liquid reforms. By doing so the 'taste buds' become sensitized to the frequency generated by the molecular restructure of the van del Waals forces¹¹. For some people the taste is sweeter while in others claim it is bitter, this depends on the sensibility and sensitivity of their taste buds. Either way everyone tested said the taste of the beverage is smoother.

How is it that the App allows for protection from cell phone radiation? It's not that the Vital App is blocking the energy that is being emitted from the phone - that is still constant and is not affected; the phone still has the same signal strength when receiving and making calls. We have unpublished evidence from studies done using the Sputnik and the Biowell device in the bio-field. What is happening is the App is creating a 'field' of positive natural frequencies around the phone and this field harmonizes the body, creating a coherent signal for the body to "lock onto" it. In doing so our cellular functions are less disturbed by the electromagnetic signals emanating from the surrounding area³.

Konstantine Korotkov describes the usage of the Sputnik as follows⁷:

The Sputnik sensor is connected to the titanium cylinder inserted onto the Bio-Well lens, creating connected resonance contours. Bias current in the electrical chain of this contour depends on the capacitance of space between Sputnik antenna and environmental-grounded and electro-conductive subjects. Both geophysical parameters of the particular environment and man-made electromagnetic fields and constructions would influence this capacitance. Emotions are related to the activity of the parasympathetic part of the autonomic nervous system, which changes blood micro-circulation, perspiration, blood microcirculation, perspiration, sweating, and other functions of the body, resulting in the changes of the overall conductivity of the body and the conductivity of acupuncture points in particular. Therefore, the presence in the vicinity of the instrument of the emotional people may change the conductivity of space and, hence, the signals of the sensor. This may be related to the formation of areas of decreased entropy in space, or, as Prof. Tiller claims, "associated with the buildup of a negative magnetic charge manifesting in the environment" Some quantum effects may be involved as well.

Secondly, fluids especially water are very susceptible to the influence of environmental frequencies emanating from microwaves, cell phones, Wi-Fi and electrical power cables. These frequencies 'scramble' the natural frequency of the water. When the app is applied to fluids the harmonizing frequencies allow "coherence", bringing the liquid back toward its natural harmonic state.

In every case of testing water on plants, seedlings or even seeds, the growth and germination levels are much higher after the water was treated with the App. The reason for this is because the plants can absorb more liquid and nutrition from EZ water. The App does not add anything or take anything out of the water; it simply restructures the molecular structure into a more beneficial state. We have noticed that animals in particular when given a choice will prefer water that has been treated with the Smart App.

References:

1. G.J. Van Wylen and R.E. Sonntag (1985), *Fundamentals of Classical Thermodynamics*, Section 5.5 (3rd edition), John Wiley & Sons Inc. New York. ISBN 0-471-82933-1
2. http://www.who.int/topics/radiation_non_ionizing/en/ Downloaded March 2016.
3. Oschman J (2000) Energy Medicine. The Scientific Basis. Elsvier Publishers, Second Edition ISBN 0-443-06261-7.
4. Pinto I.M (2003), 'Electromagnetic chaos: a tutorial', Proc. ICEAA'03, pp.511-514, Torino, Italy.
5. Pollack G. (2013), The Fourth Phase of Water. Beyond solid, liquid and vapor. Ebner and Sons publishers. ISBN: 978-0962689536.
6. Inoe R, Sohara E, Rai T, Satoh T, Yokoseki H, Sasaki, S, Uchida S, (2013) Immunolocation and Translocation of Aquaporin 5 in Sweat Glands. *J of Derm Sci* **70** (1) 26-33.
7. Woutersen S, and Bakker H,J (2003) Resonant Intermolecular transfer of vibrational energy in liquid water. *Nature* **402**, 507-509.
8. Bankovski, N. G.; Korotkov, K. G.; Petrov, N. N. (1986). "Physical processes of image formation during gas-discharge visualization (the Kirlian effect). *Radiotekhnika i Elektronika* **31**: 625–643.
9. Ricco P, Ottonelli C, Hasegawa Y, Quadrio M (2012). Changes in tubular dissipation in channel flow with oscillating walls. *J. Fluid Mech.* **700**, pp 77-104.
10. Smirnov B (1992), Cluster Ions and Van der Waals Molecules. Gordon and Breach Science Publishers. ISBN 2-88124-697-4.
11. Graighaeid W E, Nemeroff C (2001). Taste Buds Sensitivity. The Corsini Encyclopedia of Psychology and Behavioral Sciences, Third Edition, Volume **4**, John Wiley and Sons Publishers. ISBN: 978-0-471-24400-4



Gerald Pollack, Vladimir Voikoff, Trevor Marshall, Konstantine Korotkov and Carlos Orozco during the Xth Water Conference held in Varna Bulgaria in September 2015.



Carlos Orozco demonstrating the effect of vibrational energy transfer using kinesiology to Gerald Pollack and the audience during the Xth Water conference in Varna Bulgaria in September 2015.

Section 2

The History and Application of the Science that Supports the Development of the Vital App

Carlos Orozco BSc, MSc, ND, MD, PhD, FPAMS and Donato Méndez Segura, MD

Historical Background of Quantum Physics:

Reviewing the history and the evolution of physics, we come across Democritus who in the year 450 BC, developed the "Atomic Theory of the Universe" in which he described that matter consisted of particles which he called "atoms" meaning indivisible¹. But it was not until the sixteenth century that Classical Physics or as it is now known Newtonian Physics, was developed by Isaac Newton, who is considered one of the greatest scientists of all times. He astonished the world with his great discoveries, such as the Universal Gravitational Law that unifies the macro-cosmos with the micro-cosmos with the postulation of the theory he called "gravity". Newton did not know how gravity worked and left the task of discovering how it does it to future generations.

Today, increasingly dismissed by most clear thinking people who have their feet firmly on the ground. In fact Newton himself, after some contemplation, thought the practical application of his theory ridiculous, as he laid out in a letter to a friend, Richard Bentley in 1692:

"That gravity should be innate, inherent, and essential to matter, so that one body can act upon another at a distance through a vacuum without the mediation of anything else, by and through which their action and force may be conveyed from one to another, is to me so great an absurdity that I believe no man, who has in philosophical matters a competent faculty of thinking, can ever fall into it."—Isaac Newton

Years later, Albert Einstein did explained it with the development of his Theory of Relativity², Newton also found that a beam of white light decomposes into 7 colors, when it is passed through a prism and getting 7 colors (red, orange, yellow, green, blue, indigo and violet). He then passed only red light through the prism and found that it was still red; concluding that white light is made of 7 colors ranging from violet to red. Around the same time, he developed what we now know as differential and integral Calculus. He also gave us the 'Philosophiae Naturalis Principia Mathematica', a master piece, which begins with his three laws of motion.

Newton said matter is made of impenetrable solid particles with defined and permanent dimensions and these combine in order to produce substances that make ordinary objects fixed and independent from the attributes of the observer³.

When Albert Einstein postulated the reasons of his famous Theory of Relativity in the early XX century, he laid the foundations for the importance of the relative position of the observer in terms of time and space, thus formulating the concept of what we now know as the fourth dimension called space-time. A matrix, in which all objects are immersed in the cosmos that includes the micro and macrocosmos⁴, postulating what has just been rediscovered in 2016: gravitational waves which are generated by the gravitational energy in the matrix of space-time. Gravitational energy is not a force! It is known as gravitational potential energy, which is the ability that bodies have to apply an influence which depends only of the configuration of masses surrounding it. This means, if a body is affected by a gravitational field, which we now refer to as an energy quantum field, which has the ability to move due to the force that the masses exerted on it⁵.

Gravitational waves are vibrations in space-time matrix, the material from which the universe is made of. In 1916, Albert Einstein recognized that, according to his General Theory of Relativity formulated in 1905, the most violent bodies of the cosmic bodies release part of their mass in the form of energy through these waves. The German physicist thought it would not be possible to detect them because they originate too far and they would be imperceptible when reaching the Earth. On February 11, 2016, the international press published that a group of researchers announced the detection of these waves for the first time⁶.

How do gravitational waves behave? They are comparable to waves moving on the surface of a pond or sound in air (Fig. 1). Gravitational waves distort space-time and, in theory, travel at the speed of light. Its passing can modify the distance between planets, albeit very slight. As Kip Thorne explained, one of the pioneers in the research of these waves, quote: "these effects have to be especially intense in the vicinity of the source, where "wild storms" are produced and which distort space, accelerating and decelerating time"⁶.

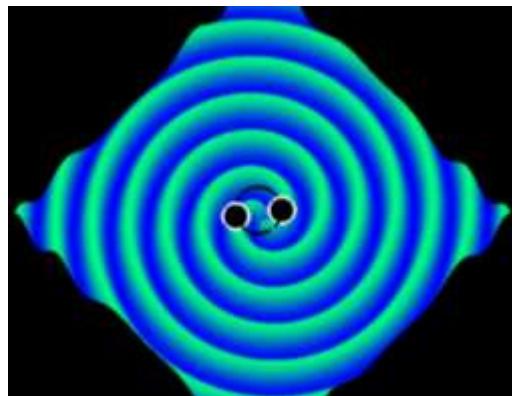


Fig. 1: Gravitational waves: gravitational waves are generated by a binary system. The deformation occurs in a perpendicular level to the direction of the wave propagation.

Continuing with the story, in the mid-eighteenth century, the Swedish researcher James Clerk Maxwell, based in England, published the Electromagnetic Theory where he introduced the concept of electromagnetic wave which allowed an adequate mathematical description of the interaction between electricity and magnetism⁷, and the formulation of his famous four equations where he introduced the concept of the scalar gradient, which gave rise in the mid 1990's to what we now know as scalar waves, thanks to the contribution of Prof. Meyl⁸.

In the last third of the XVIII century, Rutherford described that all the electrons orbiting the nucleus are equal but that they rotate or spin in different orbits. Electrons can jump from one orbit to another to confer stability to the atom, getting closer to its nucleus, in so doing, they leave behind energy that manifests itself as light, just like the tail of a comet, and is known as a photon which is nothing else but a bundle of light energy. The jump of electrons among atomic orbitals has been called the **quantum jump or quantum leap**⁹.

In 1900, Max Planck stated that energy is radiated in small units or pockets of energy he called "quanta" and described the "constant" that bears his name and is used to calculate the energy of a photon¹⁰.

In the early XIX century, Niels Bohr described that two electrons can be in two opposite positions and extremely distant from one another and what happens to one in a determined point of the cosmos will be experienced by the other in the opposite way at distance. He reassured that subatomic particles communicate with each other, regardless of distance, even in when they are in different dimensions by sending information about their states in two distant points within the cosmos. This is what we know as quantization of space¹¹. This phenomenon was referred to by Albert Einstein as spooky action at a distance and in 1935 Erwin Schrödinger called it entanglement¹².

In 1905, Albert Einstein published his Theory of the Photoelectric Effect for which he received the Nobel Prize in 1923, in which he states that light, in certain circumstances, behaves as independent energy particles (light quantum or photons). In 1913 he published The Theory of Specific Heat, which defined the term calorie as the amount of heat required to raise by one grade Celsius the temperature of the mass of a body¹³. In 1915 he published the Special Theory of Relativity, demonstrating that electromagnetism was an essentially non-mechanical theory (quantum physics).

In 1925, Louis Victor de Broglie proposed that each particle of matter has an associated wavelength, inversely proportional to its mass (momentum) and given by its speed. He said that all matter has characteristics of both, waves and particles, being able to behave in one way or another, depending on the specific experiment (Wave-Particle Duality¹⁴). In this same century, Werner K. Heisenberg formulated the uncertainty principle, a fundamental impossible to accurately measure simultaneously the position and momentum of a particle¹⁵.

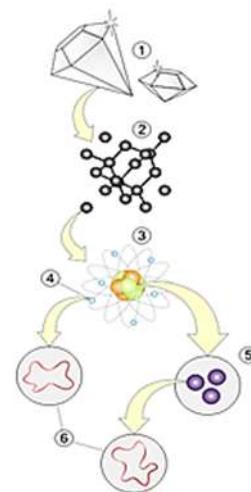


Fig. 2. Matter Levels: 1) Matter; 2) Molecular Structure; 3) Atoms; 4) Electrons; 5) Quarks; 6) Strings

In 1974, Joel Scherk and John Henry Schwarz introduced as the fundamental model of theoretical physics the String Theory in which it is basically assumed that apparently specific material particles are actually "vibrational states" of a more basic extended object called "string" or "filament". According to this theory, at a "microscopic" level, the electron would be perceived not really as a point, but as a looped rope that can move and also oscillate in different ways. If it oscillates in a certain way, then we would see it's microscopically as an electron, but if it oscillates otherwise, then we would see it as a photon or a quark¹⁶ or any other particle in the standard model (Fig. 2).

In 1984, this theory was broadened together with others such as the Theory of the Superstrings also called the M-Theory. It aims to move away from the concept of point-particle and later by the Quantized Theory from Kaluza-Klein in which it is assumed that the level of matter passes to a molecular structure, and finally strings and where basic objects of the theory would not be particles but unidimensional objects.¹⁷

All elementary particles are—depending on their spin—either bosons or fermions. These are differentiated via the spin-statistics theorem of quantum statistics. Particles of half-integer spin exhibit Fermi-Dirac statistics and are fermions.¹⁸ Particles of integer spin, in other words full-integer, exhibit Bose-Einstein statistics and are bosons.¹⁸

Currently in the M-Theory, it is admitted that the space-time in which the strings and the p-branes of the theory move would not be in the ordinary space-time of 4 dimensions but a space of the Kaluza-Klein type where 6 compacted dimensions are added to the four conventional dimensions as the variety of the Calabi-Yau. Therefore, conventionally in the string theory, there are 1 temporal dimension, 3 ordinary spatial dimensions and 7 compacted and unobservable dimensions in the practice, giving a grand total of 11 dimensions.

So, as we can see, we have moved from the **Newtonian Physics**, where the concept that matter is made of impenetrable solid particles, of defined and permanent dimensions and where they combine to produce substances that make ordinary objects with fixed and independent attributes to the observer, and which considered the universe as deterministic and predestined, to **Quantum Physics** where the atoms of matter are considered as vibrational energy and a probabilistic universe in which energy influences matter in both, macro and micro environments and where it is capable of being modified by the environment, and the human being just an observer¹⁹.

EPIGENETICS

As the Vital APP is able to transmit frequencies that cause changes in the phenotype of living due to structural rearrangement of the quantum energy field

Epigenetics is the study of the changes in the gene expression that are not due to an alteration of the DNA sequence which is heritable. It was **Conrad Hal Waddington** who coined the term Epigenetics for the first time in 1942. Epigenetics (from the Greek “epi” in or on, and “Genetics” the study of the genotype and phenotype characteristics that are transmitted from generation to generation through information packages called genes) plays a very important role in modern genetics, as it considers the genetic expression based on the signals that the epigenome receives from the environment and lifestyle of the individual. These genetic factors are determined by the cellular environment rather than by heritage. They intervene in the setting of the ontogeny or development of an organism, from the fertilization of the zygote in sexual reproduction until senescence, through going the adult stage. It also intervenes in the heritable regulation of the gene expression without any change in the nucleotide sequence, that is to say, the genotype. This allows us to say that the genotype is constant and therefore does not change.

However, the phenotype can be modified by the decoding of the signals from both the macro and micro cosmos. Therefore, it can be said that epigenetic is the set of chemical reactions, basically methylations and acetylations²⁰ besides the decoding and translation of environmental signals that modify the activity of DNA without altering the genotype, but modifying the phenotype²¹. In short, the epigenetic changes do not alter the genes but they do alter their expression. After the completion of the Human Genome Project in 2003, scientists from the 18 countries involved in it, discovered that the human genome is only composed by 25,000 genes. They expected to discover many more since they knew that the so called genetic dogma encoded for the amino acid series which constitutes the tens of thousands of proteins of the human body, especially considering that about 50% of the dry weight of the cells and the human body are made of proteins²². They also realized that there is much more on the molecular basis of the cell function, the development, the aging and many diseases. The idea that scientists had just a few years ago that human beings and other organisms are fundamentally what is written in their genes since conception is changing rapidly and science is making huge improvements achieving to decipher the language that encodes minor chemical changes capable of regulating the expression of many genes that depend purely on the influence of the signals from the micro- and macrocosms of the epigenome²³, that means, in the purely phenotypic expression.

Epigenetic regulation can occur by changes in chromatin conformation according to its interaction with histones. This is a key level of regulation as the state in which chromatin is found, determines the time, place and manner in which a gene can be expressed or not. If chromatin is in a high condensation stage, transcription elements cannot access that DNA region and therefore, the gene is not transcribed; *i.e.*, the gene is AMPUTATED or otherwise silenced. In contrast, if chromatin is not condensed, *i.e.*, it is optional, the transcriptional activators can bind to the promoter regions in order the gene transcription occurs. This is one of the ways genomic regulation occurs.

It has been determined that there are three epigenetic regulation processes: DNA methylation, histone modification and finally the effect of small noncoding RNAs as illustrated in Fig. 3.

Until today we have been able to discern epigenetic mechanisms in a variety of physiological and pathological processes including for example various cancers, cardiovascular, neurological, reproductive and immune diseases.

Methylation (Fig.4) is the addition of a methyl group (-CH₃) to a molecule. In development biology, methylation is the main epigenetic mechanism. Here, methylation consists in the transfer of methyl groups to some of the cytosine bases (C) of the DNA located prior and contiguously to a guanine (G). Since methylation is essential in the regulation of gene silencing, it may cause alterations in gene transcription without causing an alteration in the DNA sequence, being one of the mechanisms responsible for the phenotypic plasticity¹⁵.

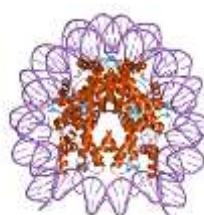


Figure 3. NUCLEOSOME

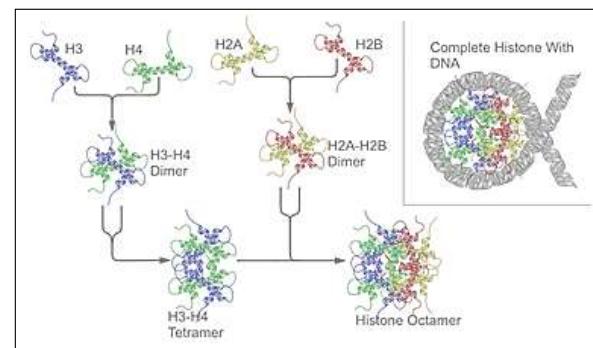


Figure. 4. Schematic Representation of the Assembly of Nuclear Histones in the Nucleosome

Chromatin is the set of DNA, histones, non-histone proteins and RNA found in the interphase nucleus of eukaryotic cells and constitutes the genome of those cells.

The main objective of the **epigenome** is to harmonize and re-balance the different vehicles of expression to achieve good health from a holistic point of view, remembering that not only environment and food will impact health, but also stress, thoughts and negative emotions, as well as the influence of the same **microbiome**. That expression nutritionists use "we are what we eat" should be replaced by "we are what we assimilate or absorb" because it is precisely the nutrients which, through methylation, acetylation and deacetylations, hydroxylation's, sulphonations, can modify chromatin, determining the activity of the histones at the level of their amino acids, lysine and arginine, allowing the gene expression²³.

Human beings have the opportunity to choose their destiny without any unalterable genetic determinism. This is thanks to epigenetics and to the quantum energy field that receives information through signals from the micro and macro cosmos through entanglement. This allows all to be one and one to be all. Our life experience is passed from generation to generation through the epigenome. But they are the proteins that control the reading and decoding of genes²⁴.

This is of crucial importance when using the Vital App which was developed with these basic principles in mind.

The cells of the human body are a triduum of matter, consciousness and energy, and have their own intelligence, so that they know when we are feeding them wrong. In 1970, **Dr. John Diamond** discovered that the muscles are strengthened or weakened in the presence of positive or negative emotional stimuli through kinesiology tests that have a binary response of strength or weakness with which we can test whether a food is acceptable vibrationally for our body. In 1985, **Dr. David R. Hawkins**, PhD in Physiology, Director of the Institute for Advanced Theoretical Research in USA., designed a calibration instrument of "relative truth" using a calibration scale of relative truth of the people, stating that muscles are strengthened or weakened facing truth and untruth, being their answer binary and not dependent on the person. This method, called kinesiology, allows distinguishing the truth (Book: Power vs. Force, Ed. Hay House). While it is not practical to test each food kinesiologically in patients to assess if it is vibrationally incompatible, when a patient refers specifically to a food intolerance it can be performed and it will be valuable.

In 1992, **A. A. Garaiev and A. Poponi** published in Nature, "**The DNA Phantom Effect**", showing the alignment of the photons of a light beam projected on DNA placed on a vacuum bed and the photons remained with the same form of DNA once removed from the chamber. It was demonstrated later how emotions affect the structure of DNA. Recently **Luc Montagnier**, Nobel Prize for Medicine in 2008 because of his contribution in establishing that HIV causes AIDS, has reported that DNA can send electromagnetic traces of itself to distant cells and fluids. He suggests that enzymes can confuse the spectral fingerprints of real DNA and faithfully copy them in order to reproduce them. Indeed, this would equate to a kind of quantum tele transportation quantum of DNA.

As it can be seen, quantum physicists, epigeneticists and science will not stop, and continue to research reporting findings that surprise us more every day and which were previously considered as unthinkable or unattainable. An example of this the Smart App.

The wave function is a mathematical construct that describes de waviness of probabilities of events at the quantum level. Quantum Physics describes how this wave function behaves and also explains the behaviour of the waves at work in the Smart App.

$$\Psi(\vec{x}, t) = \sum_n a_n \Psi_n(\vec{x}, t) = \sum_n a_n e^{-iE_n t/\hbar} \varphi_n(\vec{x})$$

Whenever there is a conscious observer present it causes the collapse of the wave function. It basically destroys information.

$$\langle \Psi_n | \Psi \rangle = \int dx^3 dt \sum_n a_n^* a_{n'} e^{-i(E_{n'} - E_n)t/\hbar} \varphi_n^*(\vec{x}) \varphi_{n'}(\vec{x}) = |a_n|^2$$

An interesting phenomenon is the role of the observer in this scenario, since an observer has a chaotic effect in describing and explaining what goes on when he is in the loop. Most physics experiments keep the observer out of the loop. In other words, "they keep scientists out of the box", the very reason scientific discoveries are made, the Vital App being one of them.

Dr William Tiller (www.tiller.org) states that human intention can significantly influence properties of materials and the nature of reality. This capacity is enhanced by the Vital App and can be felt in the texture and pallet of liquids such as spirits, hot beverages and water containing foods.

This is because the physical restructuring of liquids goes beyond the molecular and the atomic level. The quantum field and the harmonics between the Vital APP and bio-photons, through the scalar wave equation in three dimensions account for such restructure in that results from the interaction of vibrational and gravitational waves.

Bio-photons emit from DNA. This is extraordinary as it gives rise to coherence. The Coherence state is defined as an Eigen-state of the annihilation operator $a(a) = a|a$, where $[a^-, a^+] = 1$, and 1 is harmony³⁰.

Gluber and Mehtaetal^{31,32} have shown that the coherent state reminds coherent at all times, when the Hamiltonian equation takes the form of:

$$H = \sum_{jk} f_{jk}(t) a_j^+ a_k + \sum_k (g_k(t) a_k^+ + g_k(t) a_k) + b(t)$$

The terms describe the free energy, the exchange of energy and the interaction of energy.

When we introduce the functions.

$F(t)a^+a = \sum_{jk} \dots$, $G(t)a^+ = \sum_k \dots$ and $G(t)a = \sum_k \dots$ we can rewrite the equation as:

$$H = F(t)a^+a + G(t)a^+ + G(t)a + B(t)$$

So, to calculate the properties of the coherent state $|\alpha\rangle$ under the influence of the Hamiltonian $(t)H$.

The Schrödinger equation takes the form of $i\hbar \frac{\tau|\alpha(t)}{tt} = H|\alpha(t)$ for which the initial condition is $|\alpha(0) \geq |\alpha$ and this solution can be written as:

$|\alpha(t) = e^{-1} \frac{\int_0^1 H(t)dt}{\hbar} |\alpha(c)$ Consequently we obtain.

$|\alpha(t) = e^{(-\frac{i}{\hbar} \bar{F}a^+a + \bar{G}a^+ + \bar{G}a + \bar{B}(t))} |\alpha$ where $\bar{F}, \bar{G}, \bar{B}$ are abbreviation of $\int_0^1 F(t)dt, \int_0^1 G(t)dt, \int_0^1 B(t)dt$ respectively.

Since $\bar{B}(t)$ is simply C we can factorize

$$|\alpha(t) = e^{-\frac{i}{\hbar} B(t)} \cdot e^{-\frac{i}{\hbar} Fa^+a} \cdot e^{\frac{i}{\hbar} (\bar{G}a^+ + \bar{G}a)} \cdot e^{\frac{1}{2} \left[-\frac{i}{\hbar} F a^+ a - \frac{i}{\hbar} (\bar{G}a^+ + \bar{G}a) \right]} |\alpha$$

The Baker-Hausdorff identity

$$e^{(\bar{0}_1 + \bar{0}_2)} = e^{(\bar{0}_1)} e^{(\bar{0}_2)} e^{\frac{1}{2} [\bar{0}_1 \cdot \bar{0}_2]} \text{ with a straight forward calculation using } [a, a^+a] \Rightarrow |\alpha(t) = e^{(\frac{i}{\hbar} F a^+ a)}$$

we get:

$$\begin{aligned} \alpha(t) &= e^{\frac{1}{4\hbar^2} \bar{F} (\bar{G}_\alpha - \bar{G}_\alpha)} e^{\frac{i}{\hbar} \bar{B}(t)} e^{-\frac{i}{\hbar} F a^+ a(t)} e^{\left(-\frac{i}{\hbar} (\bar{G}_\alpha + \bar{G}_\alpha) \right)} e^{\left((\alpha + \frac{i}{2\hbar} FG) a^+ a + \frac{1}{2\hbar^2} FG \right) a} |(a) \\ \alpha(t) &= e^{\frac{1}{4\hbar^2} (\bar{F} (\bar{G}_\alpha - \bar{G}_\alpha) - \frac{i}{\hbar} (G(\alpha^+ + \frac{1}{2\hbar^2} \bar{F} G) + G(\alpha + \frac{1}{2\hbar^2} \bar{F} G))} e^{-\frac{i}{\hbar} (B(t))} e^{-\frac{i}{\hbar} \bar{F} a^+} \mathcal{D}(\alpha) \\ &\quad + \frac{1}{2\hbar^2} \bar{F} \bar{G} - \frac{i}{\hbar} G \Big) |a \Rightarrow |\alpha(t) = \gamma |\beta(t)| \end{aligned}$$

Consequently we get: $|\alpha(t)| = e^{\frac{i}{\hbar} [(\bar{F} a^+ a + G a) + \bar{B}(t)]} |\alpha|$

Where $\bar{F}, \bar{G}, \bar{B}$ are abbreviations of $\int_0^1 F(\hbar)dt, \int_0^1 G(t)dt, \int_0^1 B(t)dt$

$$\gamma = e^{\left\{ \frac{1}{4\hbar^2} F(G_\alpha - G_\alpha) - \frac{i}{\hbar} \left\{ G \left(\alpha + \frac{1}{2\hbar^2} FG \right) \bar{G} \left(\alpha + \frac{1}{2\hbar^2} FG \right) + \bar{B}(t) + \bar{F} \right\} \right\}}$$

$$\text{Where } \beta(t) = \alpha(0) + \frac{1}{2\hbar^2} \bar{F} \bar{G} - \frac{i}{\hbar} G \quad \gamma \cdot \gamma = 1$$

Harmony

So, now we can look at the wave equations that determine the ability of biological systems such as the DNA of the human body to emit bio-photons and translate their vibrational resonance via the signature wave through the Vital APP.

The Wave Equation

The wave equation is $x = A \sin [\omega(t - K)] + b$

A is the peak amplitude of the wave,

x is the oscillating variable,

ω is angular frequency,

t is time,

K and b are arbitrary constants representing time and displacement offsets respectively.

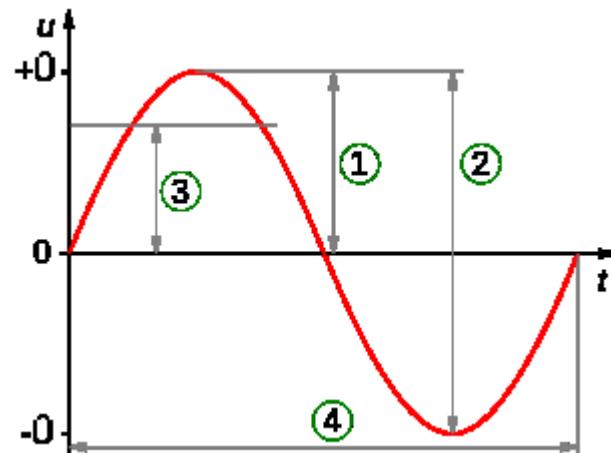


Figure 5. Schematic Representation of a Hertzian or Sinusoidal Wave. Waves travel through space-time as a sinusoidal function that allows for the measurement of the wave amplitude, the wave frequency, the wave intensity, the wave length and the wave period.

Sinusoidal curve

1 = Peak amplitude (\hat{U}),

2 = Peak-to-peak amplitude ($2\hat{U}$)

3 = Root mean square amplitude $\left(\hat{U}/\sqrt{2}\right)$

4 = Wave period (not an amplitude)

Peak-to-peak amplitude is the change between peak (highest amplitude value, which can be positive) and trough (lowest amplitude value, which can be negative).

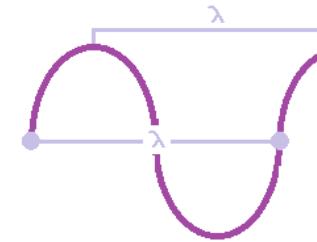
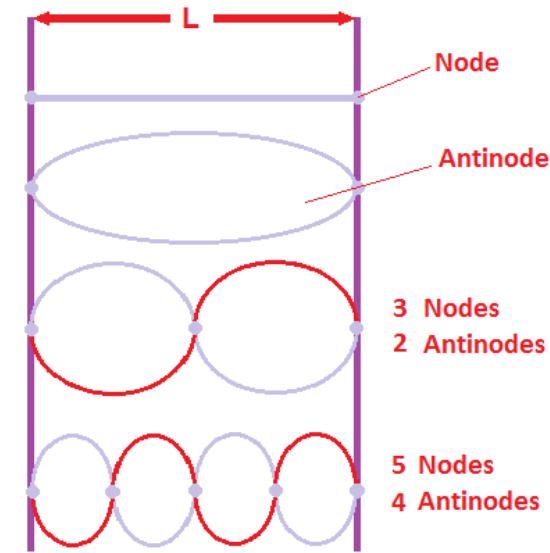
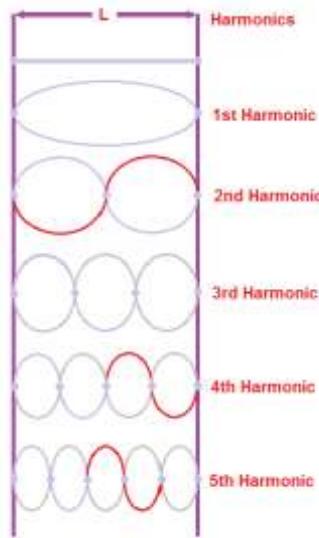
The wave equation is a hyperbolic partial differential equation τt , that concerns time (t) as a variable, space as a variable $x, x_1, x_2 \dots x_n$ and a scalar function $u(x_1, x_2, x_n \dots t)$, whose values could be modeled as the displacement wave, and thus for allows scalar waves to become vortices which once were regarded as standing waves³³.

In Physics a standing wave, also known as a stationary wave, is a wave in a medium in which each point on the axis of the wave has associated constant amplitude. The locations at which the amplitude is at a minimum are called nodes, and the locations where the amplitude is at its' maximum are called antinodes³⁴ (see diagrams below).

A standing wave pattern is a vibrational pattern created within a medium when the vibrational frequency of the source causes reflected waves from one end of the medium to interfere with incident waves from the source. This interference occurs in such a manner that specific points along the medium appear to be standing still. Because the observed wave pattern is characterized by points that appear to be standing still, the pattern is often called a *standing wave pattern*.²⁴

Such patterns are only created within the medium at specific frequencies of vibration. These frequencies are known as harmonic frequencies, or merely harmonics. At any frequency other than a harmonic frequency, the interference of reflected and incident waves leads to a resulting disturbance of the medium that is irregular and non-repeating^{35,36}.

The nodes are the receiver and the antinodes are the antenna.



λ = wave length
 L = Length of the total wave

$$L = \frac{\lambda}{2} \Rightarrow \text{Half of the wave length}$$

$$\lambda = 2L \qquad \lambda_1 = 2L \Rightarrow \frac{2}{1}L$$



$$\lambda = L \Rightarrow \lambda = \frac{2}{2}L$$

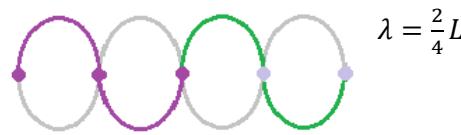
$$L = \lambda$$

$$\lambda_2 = L \Rightarrow \frac{2}{2}L$$



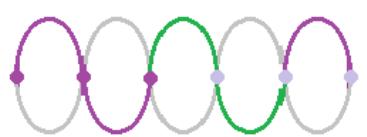
$$L = \frac{3}{2}\lambda$$

$$\lambda_3 = \frac{2}{3}L \Rightarrow \frac{2}{3}L$$



$$\lambda = \frac{2}{4}L$$

$$\lambda = \frac{L}{2} \Rightarrow \frac{2}{4}L$$



$$\lambda_5 = \frac{2}{5}L \Rightarrow \frac{2}{5}L$$

$$L = \frac{5}{2}\lambda \quad \lambda = \frac{2}{5}L$$

For any given harmonic the expressions to calculate the wave length, frequency and velocity of the wave are as follows:

$$\lambda_n = \frac{2}{n}L$$

$$f = \frac{1}{sec} \quad f_n = \frac{v_n}{2L}$$

$$\lambda = m \quad v = \sqrt{\frac{F_t}{\mu}}$$

$$v = \frac{m}{sec}$$

The wave equation for a scalar function $u = u(x_1, x_2, x_3, \dots, x_n, \tau)$ is

$$\frac{y^2 u}{y\tau^2} = c^2 \nabla^2 u$$

Where ∇^2 is the spacial Laplacian. Solutions for this equation that are initially zero outside the restrictive region spread out of the region to a fixed speed in all directions.

So we need to consider the following parameters:

1. Constant C is identified with the propagation of speed of the wave.
2. The equation is linear, as the sum of the two solutions is again a solution; In Physics this property is called the superimposition principle.
3. The equation itself does not specify a solution. A solution is obtained by setting up conditions, such as initial conditions which prescribe the determination of the value and velocity of the wave. The value is determined by the length of the wave λ and the velocity of the wave which is calculated by

$$V_n = f_n 2L \Rightarrow V_n = 2L f_n \Rightarrow V = \sqrt{\frac{f_t}{\mu}} f \tau = \text{Force of the tension.}$$

4. Boundary conditions for which solutions are present and represent standing waves or harmonics are analogous to musical notes.

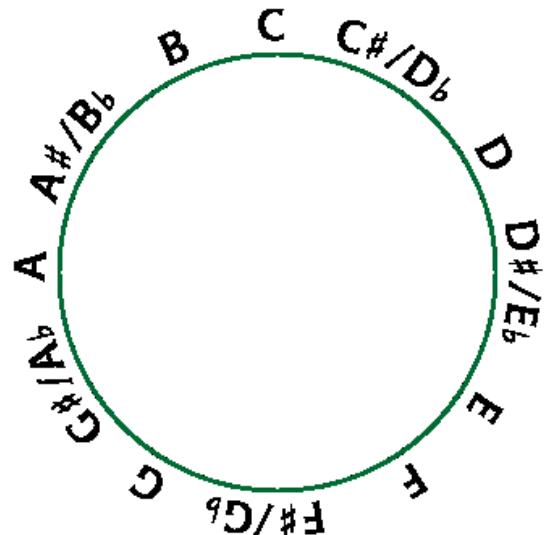
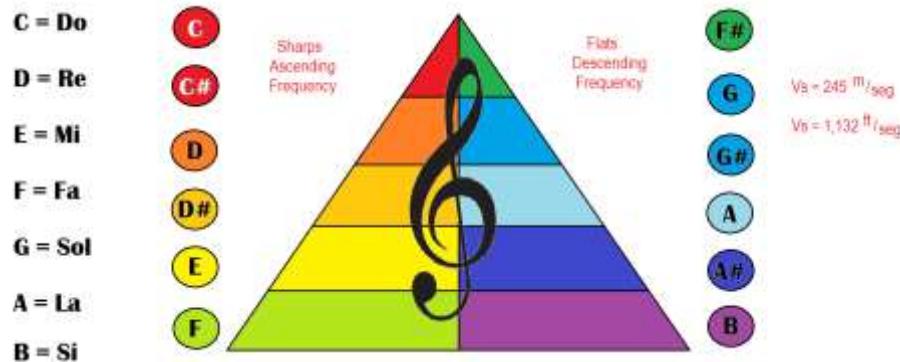


Figure 6. Chromatic scale on C: These diagrams including the pentagram are different ways to represent a full octave ascending and descending. As it can be seen the wave length of the primary colors correspond to each of the 8 notes found in an octave, and this match allows for frequencies to be in-printed in notes that allow for harmonics to be used in the Vital APP.

When the intensity of the standing waves allow for harmonics within the system they are working at,

5. The wave equation is found in quantum mechanics, plasma physics, and general relativity.
6. The wave equation in one dimension can be expressed as:

$$\frac{y^2 y}{y t^2} = C \frac{y^2 y}{y x}$$

Measure of stress or disturbance $u(x)$ measures the distance from equilibrium of mass situated at x .

The forces extended and exerted on the mass at location $x + h$ are:

$$F_{Newton} = m \cdot a(t) = m \cdot \frac{\partial^2}{\partial t^2} u(u + h, \tau)$$

$$\begin{aligned} F_{Hooke} &= F_{x+2h} - F_x \\ &= k[u(x + 2h, \tau) - u(x + h, \tau) - u(x + h, \tau) + u(x, \tau)] \end{aligned}$$

The equation of motion for the weight at location $x + h$ is:

$$m \frac{\partial^2}{\partial t^2} u(u + h, \tau) = k[u(x + 2h, \tau) - u(x + h, \tau) - u(x + h, \tau) + u(x, \tau)]$$

Where the time dependence of $U(x)$ has been made explicit. The array of N weights spaced evenly over the length $L = Nh$ of total mass $M = Nm$ and the total spring constant of array $K = \frac{EA}{L}$ We then can write the equation as

$$\frac{\partial^2}{\partial t^2} u(x + h, \tau) = \frac{KL^2}{M} \frac{\partial^2 u(x, \tau)}{\partial x^2}$$

Taking the limit $N \rightarrow \infty, h \rightarrow 0$

$$\frac{\partial^2 u(x, t)}{\partial t^2} = \frac{KL^2}{M} \frac{\partial^2 u(x, t)}{\partial x^2}$$

$\frac{KL^2}{M}$ is the square of the propagation of the speed.

The one dimensional wave equation is unusual for a partial differential equation.

$\xi = x - ct$ $\eta = x + ct$ changes the equation into $\frac{\partial^2 u}{\partial \xi \partial \eta} = 0$

$U(\xi, \eta) = F(\xi) + G(\eta)$ therefore $U(x, \tau) = F(x - c\tau) + G(x + c\tau)$

These two equations are advection equations, one travelling left, the other travelling right both with constant speed

Solutions to the wave equations are sums of a right travelling function F , and a left travelling function G .

Travelling means that the shape of these individual arbitrary functions are translated right and left with time at speed c .

This is derived from the Jean Le Rond D' Alambert formula.

The result is the d' Alembert formula

$$u(x, t) = \frac{f(x - ct) + f(x + ct)}{2} + \frac{1}{2} \int_{x-ct}^{x+ct} g(s) ds$$

Where the impulse travels to the right and to the left.

Scalar wave equation in three Dimensions:

$$\nabla^2 \rightarrow \frac{1}{r^2} \frac{\tau}{\tau t} \left(r^2 \frac{\tau}{\tau r} \right) = \frac{\tau^2}{\tau r^2} + \frac{2}{r} \frac{\tau}{\tau r}$$

Taking the angles into account:

$$\frac{\tau^2 u}{\tau t^2} - c^2 \left(\frac{\tau^2 u}{\tau r^2} + \frac{2 \tau u}{r \tau r} \right) = 0 \Rightarrow \frac{\tau^2 (ru)}{\tau t^2} - c^2 \frac{\tau^2 (r, u)}{\tau r^2} = 0$$

$$u(r, t) = \frac{1}{r} F(r - ct) + \frac{1}{r} G(r + ct)$$

The wave equation is linear in u and it is left unaltered by translation in space and time. Spherical scalar wave can be generated $\varphi(\xi, \eta, \zeta)$ as an arbitrary function of three independent variables.

$$r^2 = (x, \xi)^2 + y(-\eta)^2 + z - \zeta)^2$$

if u is a superposition of such waves.

$$u(t, x, y, z) = \frac{1}{4\pi c} \iiint \varphi(\xi, \eta, \zeta) \tau \frac{(r - \delta)}{r} d\xi d\eta d\zeta$$

$$u(t, x, y, z) = \frac{1}{4\pi c} \iint \varphi(x + ct\alpha, y + ct\beta, z + ct\gamma) d\omega$$

Where α, β, γ are coordinates of the sphere S , and ω is the area of the element of S . The result is that $u(t, x)$ is times the mean value of φ on a sphere of radius ct centered at x .

$$u(t, x, y, z) = tMct[\varphi] \Rightarrow u(0, x, y, z) = 0; u_t(0, x, y, z) = \varphi(x, y, z)$$

$$u(t, x, y, z) = \frac{\tau}{\tau t} (tM_{ct}[\varphi]), u_t = (0, x, y, z) = 0$$

These formulas provide the solution to the initial value of the wave equation. Scalar wave equation in two space dimensions.

$$U_r = c^2(u_{xx}, u_{yy}) \Rightarrow u(0, x, y) = 0; U_r(0, x, y) = \phi(x, y)$$

The tridimensional formula becomes:

$u(t, x, y) = tM_{ct}[\phi] = \frac{t}{4\pi} \iint \phi(x + ct\alpha, ct\beta) d\omega$ α and β are coordinates of the unit of the sphere, and $d\omega$ is the area of the sphere.

$$u(t, x, y) = \frac{1}{2\pi c} \iint \frac{\varphi(x + \xi, y + \eta)}{\sqrt{(ct)^2 - \xi^2 - \eta^2}} d\xi d\eta$$

The solution for (t, x, y) does not only depend on the light from the external cone but also from the internal light of the cone. The cone is in fact a tri-dimensional vortex whose interaction with others allows for the formation of a metatron cube³⁴.

Biological systems are ruled by Quantum Mechanics, where like attract like through resonance and vibration. The interaction among particles results in the combined action of vortices results in the formation of a cube known as the metatron cube³⁴. Inside the cube the process of entanglement occurs, where everything resonates and interacts with everything else, where everything is one and one is everything. Where the simplicity becomes complex and the complexity becomes simple.

Therefore, the signature wave is based on the wave equation in three dimensions from the particle's vibratory resonance by means of the process of vorticeal entanglement that determines the structure and function of any biological system³⁵. Figure 7 shows the coherence established between the frequencies of nature resonating along the Vital App which allows for a quantum leap which ultimate outcome is the transfer of energy and the expression of changes that occur in the physicochemical and structural properties of the system they are acting upon. So, water molecules become re-structured, and are able to improve cellular hydration, reducing oxidation and optimizing the energy management system within cells. They establish the EZ and water becomes denser, giving a smother taste to beverages. The combined action of the frequencies between the Vital App and those of the environment, allowing for the formation of a quantum energy field that reduces the harmful effects of non-ionizing and ionising radiation emanating from EMF.

About the Authors



Conclusion

The Vital App Company has created a mobile phone application built around nature's own specific frequencies & vibrations. We have found these to be very beneficial in harmonizing all man made liquids and fluids. Clearly, more research needs to be done in this area and much is already underway. We are currently working with Prof Bernard Kröplin at the TAO institute in Stuttgart Germany to prove the effect of the Vital App in forming hydrative water droplets. Prof Kröplin is a world leading expert in this area and we hope to have results from this research by mid 2016. We are also conducting ultraviolet spectroscopy studies at the Department of Molecular and Cellular Biology at the Burzynski Research Institute in Houston Texas, and hope to engage the research team of Gerald Pollack from Washington University. Some of these results will be presented this year at the XIth Water Conference in Sofia Bulgaria chaired by Gerald Pollack in late September.

Dr. Carlos Orozco is a scientist with professional training in the area of Biological and Health Sciences holding a bachelor's degree in Experimental Biology, majoring in the areas of Biochemistry and Biophysics from Universidad Autónoma Metropolitana (Autonomous Metropolitan University), Iztapalapa Campus, Mexico; a Master Degree in Science in the field of Immunology and Tumor Cell Biology from the Institute of Biomedical Sciences at the Universidad Nacional Autónoma de México (National Autonomous University of Mexico); a PhD in Biochemistry and Immunology of Reproduction from the School of Biomedical Sciences at Griffith University in Brisbane, Australia; a Postdoctoral research fellowship in Human Fertility from the Lalor Foundation in Boston, Massachusetts in the United States.

He has been an Associate Professor in Human Fertility and Gynecological Oncology at the University of the King Khalid and the King Saud Hospital in Saudi Arabia. He also holds a degree in Natural Medicine, focusing in Vibrational Medicine and Clinical Nutrition from the Australian Institute of Applied Sciences. He is a Fellow at the Philippine Academy of Medical Specialists (FPAMS). He worked for 7 different pharmaceutical companies during 13 years. Since 1985 he has lived in Australia, Germany, Sweden, Saudi Arabia and Kuala Lumpur. Presently he is living in Mexico City where he continues to travel extensively to the United States, Canada, South America, South East Asia, Europe and Africa.

He has participated as a speaker in international symposia in various countries in the fields of Biological and Functional Medicine, as well as in conferences about Anti-Aging Medicine. He has presented his work on Quantum Physics in the poster session at the Biology, Physics and Chemistry of Water Conference in Bulgaria in 2014 and 2015. In 2015, he became an instructor at the Hado Institute in Tokyo, Japan, which is a legacy left by Masaru Emoto and was indoctrinated as a Fellow of the Philippine Association of Medical Specialists

(FPAMS). He is associated with Prof. Bernard Kröplin and the Tao Institute in Stuttgart, Germany and with Dr Stanislaw Burzynski at the Burzynski Research Institute in Houston Texas USA.

In his clinical practice he has worked with technology developed in Russia and Germany using different devices such as: Prognos, the Fisospect, the Isogenix Core Machine, the Biowell, the Sputink, the Scio and Essential Oils of Young Living where he is a member of the scientific committee.

Dr. Carlos Orozco

BSc, MSc, ND, MD, PhD, FPAM

Medical and Scientific Director Cell-Wellbeing.

Dr. Donato Mendez Segura is an internist and geriatrician who has practiced allopathic medicine for 30 years. In 2009, tired of seeing so many side effects of allopathic medicine and aware of conflicts of interest generated by the pharmaceutical industry, he decided to research most of the complementary medicines that existed on a par with allopathic medicine. Great was his surprise when he found efficient and safer alternatives, without adverse effects for his patients.

Nowadays he only handles allopathic medicines in emergency cases and hospitalization and for a short time. He prefers to use orthomolecular, homeopathic and anti-homotoxicological medicine, as well as biomolecular therapy and cell therapy with excellent results. For this, he has acquired equipment with the technology that allows to assess patients vibrationally (Rayonex S10 and Obermax), which unfortunately require more time for patients' assessment. He also uses a quantum magnetic resonance analyzer that allows checking patients in 5 to 10 minutes. It is very accurate in marking the orthomolecular deficiencies that it reports, recommending the necessary supplements where favorable responses can be observed during the following

two weeks in his patients. He has been observing the same answer over the last 5 years.

Recently, in December 2015, in the Anti-Aging Congress A4M in Las Vegas, Nevada, he found an interesting device, the S-Drive from the Company Cell Wellbeing, which consists of a hemodynamic bio-profiler that scans the hair follicle. Hair is known as an excellent bio-marker that stores a lot of information. The S-Drive makes it possible that such information is expressed through vibrational resonance, decoding, digitalizing and sending it via Internet to a supercomputer located in Hamburg, Germany where it is processed and analyzed. It issues a report of approximately 30 sheets about the patient's nutritional status and the impact that the consultant has had: the effect of the environment, nutrition, emotions, stress and even his/her microbiome.

This is generated in 15 minutes, returning the report to the consulting physician for its interpretation. The physician can now develop an optimization program for the patient during 90 days, enabling the patient's health to improve through appropriate nutrients and based on harmony and good resonance. Since the system allows the patient to rescan within 90 days, the doctor will be able to compare the results and see if the patient complied with the optimization health plan.

This means, we have within our reach a new type of healing. Certainly the S-Drive does not determine methylations because it is not designed for it. However, as Bruce Lipton stated, we have a new way to understand and to comprehend our body through measuring the vibrational fields which, as a communication means, is 100 times more efficient compared to the determination of chemical substances such as the methylations.

Dr. Donato Méndez Segura Internist-Geriatrician, Tamaulipas, Mexico.

Bibliography

1. Henry George Lio; Robert Scott. «ad. Voc. ἄτομος». A Greek-English Lexicon (in English). Consulted June 7, 2014;
2. Brian Greene. The Elegant Universe. From Newton to Einstein. https://www.youtube.com/watch?v=Yi1H_9JOwkl. Downloaded March 5, 2016;
3. Physics – Physical Science Study Committee (1966). ISBN 978-0-669-97451-5;
4. Hafele, J., Keating, R. Around-the-World Atomic Clocks: Predicted Relativistic Time Gains. *Science* 177 (4044): 166–168;
5. Hawking, Stephen and Ellis, G. F. R. (1973). *The Large Scale Structure of Space-Time*. Cambridge: Cambridge University Press. ISBN 0-521-09906-4;
6. Fernández Barbón J. L., "Una nueva astronomía ha nacido hoy" (A new astronomy has been born today), *El País*, Science Section, February 12, 2016; http://elpais.com/elpais/2016/02/11/ciencia/1455201194_750459.html
7. Cánovas Picón, Francisco (S. F.), James Clerk Maxwell. Murcia, Murcica University;
8. Konstantine Metyl (2015) <http://www.k-metyl.de/go/Primaerliteratur/Scalar-Waves.pdf>;
9. Gamov, George. Biography of Physics. Salvat. 1971, pp. 179-180;
10. Hermann, Armin (July 2000). Max Planck, "mit Selbstzeugnissen und Bilddokumenten" (Self-Attestation and Picture Documentation) (7th edition). Rienbeck bei Hamburg: rororo. ISBN 3-499-50198-8;
11. A. B. Weird Scientists, the Creators of Quantum Physics, pg. 124. Lulu.com, 2011. In Google Books. Consulted on February 6, 2016;
12. Schrödinger E. (1935). "Discussion of probability, relations between separated systems". *Mathematical Proceedings of the Cambridge Philosophical Society* 31 (4): 555–563;
13. Isaacson, Walter (2008). Einstein: His Life and Universe. New York: Simon and Schuster, pp. 390;
14. <http://genealogy.euweb.cz/broglie/broglie3.html>;
15. Thomas Powers. Heisenberg's War: The Secret History of the German Bomb (Knopf) ISBN 0-394-51411-4;
16. Greene, Brian (2005). «Brian Greene: Making sense of string theory». TED.com;
17. J. M. Overduin & P. S. Wesson, "Kaluza-Klein Gravity", *Physics Reports*, p. 303-378, 1997, (an extensive general explanation of the theory models of Kaluzna-Klein, 75 pages);
18. Sylvie Braibant; Giorgio Giacomelli; Maurizio Spurio (2012). *Particles and Fundamental Interactions: An Introduction to Particle Physics* (2nd ed.). Springer. pp. 1–3. ISBN 978-94-007-2463-1
19. Brian Greene, The Elegant Universe: Superstrings, Hidden Dimensions, and the Quest for the Ultimate Theory, ISBN 0-393-04688-5, W.W. Norton & Company, February 1999;
20. Cheung P, Lau P. (2005), Epigenetic regulation by histone methylation and histone variants. *Mol Endocrinol Mar*; 19(3):563-73;
21. "Canalization of development and genetic assimilation of acquired characters". *Nature* 183:1654-1655. (Year and authors missing);
22. John Kotz, Paul Treichel, Gabriela Weaver (2005). Chemistry and Chemical Reactivity. Sengage Learning. ISBN053499766X,9780534997663, <https://books.google.es/books?id=4vL3SjWjEcQC&pg=PA461&lpg=PA461&dq=50%2>;
23. International Human Genome Sequencing Consortium (2004). «Finishing the euchromatic sequence of the human genome.». *Nature* 431 (7011): 931–45. PMID 15496913. [1];
24. Shilatifard A. (2006). «Chromatin modifications by methylation and ubiquitination: implications in the regulation of gene expression». *Annu. Rev. Biochem.* 75: 243–69. doi:10.1146/annurev.biochem.75.103004.142422. PMID 16756492;

25. Lipton, Bruce H. La biología de la creencia: la liberación del poder de la conciencia, la materia y los milagros (The biology of belief: the liberation of the power of consciousness, matter and miracles). La Esfera de los Libros, 2007. ISBN 978-84-96665-18-7;

26. Carlos Orozco MD., presentation for the Anti-Aging Congress of the A3M in Mexico, Mexico City, February 2016;

27. Lipton Bruce H. (2013) <http://brucelipton>
1.s3.amazonaws.com/member_call_with bruce_december_2013.mp3;

28. Vibrational Medicine, Dr. Richard Gerber, (1988); Energy Medicine 1e, Dr. James L. Oschman, (2000);

29. Carlos Orozco MD, Presentations in the US, Los Angeles and Las Vegas, in Mexico City. In Bogotá, Colombia in the Shaio Fundation, all for medical communities in different congresses between September 2015 and March 2016.

30. Feynman, Richard P. (1998). *Statistical Mechanics: A Set of Lectures* (2nd ed.). Reading, Massachusetts: Addison-Wesley. ISBN 978-0-201-36076-9.

31. R.J. Glauber, Coherent and incoherent states of radiation field (1963), *Phys. Rev.* **131** 2766-2788.

32. R. V. Mehta, Rajesh Patel, Rucha Desai, R. V. Upadhyay, and Kinnari Parekh. (2006). Experimental Evidence of Zero Forward Scattering in Magentic Spheres. *Phys. Rev. Lett.* **96**, 127-147

33. <http://physics.info/waves-standing/> Downloaded August 2015.

34. <http://www.physicsclassroom.com/class/sound/Lesson-4/Fundamental-Frequency-and-Harmonics> Downloaded August 2015

35. Ketler, Alanna (2013). "The Secret To How The Universe Works Lies Within This Geometrical Pattern. What Is The Flower of Life?". Collective Evolution. Retrieved November 5, 2015

36. Vincenzo D'Ambrosio, Gonzalo Carvacho, Francesco Graffitti, Chiara Vitelli, Bruno Piccirillo, Lorenzo Marrucci, Fabio Sciarrino (2015). Hybrid Entangled Entanglement in Vector Vortex Beams. *Quantum Physics*. arXiv:1507.08887v1