

INTRODUCTION

It is the purpose of this book to offer a more modern description for biology using quantum physics, electron dynamics, virtual photons, and fractal mathematics. This book is organized in two parts; one is the Quantum Biology, which outlines in lay language some of the philosophy needed for this new perception uniting biology with our contemporary physics. Accompanying this is *Towards a Bio-Quantum Matrix*, which contains more scientific and mathematical language. The other book presents evidence of the more scientific nature needed to understand these phenomena for the expert scientist.

As science seeks to know more about the environment that surrounds us, we develop many different theories and correlate more observations to allow us to understand and predict occurrences. In the field of medicine and biology mankind has often been stuck without a true science; more of an observation phenomenology. This book will bring up some severe challenges for a system of medicine that has been based on a Newtonian (thus archaic) system of physics. This book will challenge modern society and the medical rites performed within it.

Many heretics such as Harvey, Galileo, Newton and Pasteur have challenged society's morays and socially-accepted theories. At first this book will seem heretical; we hope that this book, like those that have gone before, will be gradually accepted into the mainstream.

One of the great medical thinkers of the modern age was Harvey. Harvey was one of the first people in the west to realize that blood circulated through the body. In his time, people were unaware of that. They knew that there was blood in the body (that when you cut yourself blood came out) and they knew that everyone has a heart, but they did not realize that blood continuously flows through the body in a circular fashion.

Harvey saw that there were veins and arteries, and that they seemed to carry blood toward the heart and then away from the heart, respectively. Eventually he realized that there had to be some sort of exchange, peripherally, from one to the other. At this point he postulated the existence of capillaries.

He never saw capillaries. He never had the benefit of a microscope. He realized intuitively, however, that there had to be some structures allowing the blood to move as it did without accumulating somewhere.

Many keen thinkers have recognized repeating cycles in nature-- which are, after all, at the core of most natural phenomena. Harvey is in company with Galileo, Euclid, Einstein, Pasteur, Hippocrates and others in this respect. All of them were misunderstood by their peers and by the prevailing social powers. Fortunately, their ideas were eventually accepted. The discussion to follow deals with some newer energetic repeating cycles, which also will be misunderstood by many. The author believes that these new ideas will gain ascendancy in due course, and will eventually form the basis for all biomedical science.

In some contexts conservatism is a virtue; but it can be taken too far. Western medicine has become enamored of its own models of bodily function and narrow-minded in its view of alternative models-- even when it can be demonstrated that those "alternative" models are more congruent with basic scientific knowledge than the ones it clings to. It is vital to maintain an open mind in the face of new ideas.

Let's take an example: E. coli bacteria. E. coli goes through a cycle of G1, synthesis, G2, and mitosis. It goes through this cycle every twenty minutes. Each cycle ending in mitosis results in another E. coli organism. What's happening in these steps that allows life? What is it that allows this E. coli to reproduce, to literally guarantee new life?

The answer given by conventional western medicine is based on mechanistic analysis of events at the cytologic and molecular levels. Such analysis has become very sophisticated, and has provided many insights into the specific biochemical changes associated with reproduction. As we shall see, however, these analyses are based on but one reality model-- a model that is useful for explanation of certain phenomena, but that cannot ultimately account for the open-ended systems of life. It cannot explain many facets of life.

There must be a cycle of subatomic enegy and vibration shifts that repeat with incredible stability. There appears to be an imposition of order on these quantic events. We suppose that there is a subspace polymorphic or shape set imposed on the entities of a cell or organism. This subspace effect pervades the entire universe and permeates the particles of all life. This theory is explored in the context of medicine and biology within this treatise.

Models are, by definition, theoretical or hypothetical structures which account tentatively for observed phenomena. When well developed, they are useful maps. The model on which modern western medicine is based, mechanism, has been useful and has allowed many advances. Unfortunately, mechanism has become a canonized doctrine that now obstructs real progress.

It would shock most people to know that conventional western medicine is at least fifty years behind the times with respect to scientific thought. J. Robert Oppenheimer, the developer of the atomic bomb and one of the great physicists of our age, remarked that he felt pity for conventional western physicians since they had taken to

heart the assumptions of Newtonian physics, a model which physicists had "laid to rest fifty years ago." The English physician Glin Bennet described this problem pointedly:

"...many of the contemporary clinical approaches which so alarm the medical establishment are closer to present-day scientific thinking than the utterances of the high priests of medicine. Physicists can now talk quite easily to psychologists and to complementary and holistic practitioners, because they are grappling with many of the same kinds of issue and live with uncertainty as a central part of their theories. By contrast, doctors who pride themselves on being scientists have allowed themselves to become imprisoned in an immutable cartesian-newtonian system, by closing their minds to anything which demands more than a simple mechanical explanation.

"These unfortunate people have long since parted company with the current streams of scientific thought, and they would be regarded as little more than a joke but for the fact that they have such power over their patients and influence in training the doctors of the future."¹

Mechanistic analysis can get us only so far. If we did a chemical analysis of a television set, for example, we would find so much tin, silicon, lead, etc. Obviously, we wouldn't get any information about what a TV set really is or does, because the real function of the TV has to do with subtler energies (the reception of photons (EMR) which is transformed into pictures and sound). If we restrict ourselves to mechanistic analysis, we will consistently miss the really important phenomena.

Mechanism relies heavily on statistical analysis, wherein are described means, standard deviations, etc. These analyses are useful in thermodynamics, where entropy or randomness prevails. Living systems are non-random and negentropic, and statistical analysis is inadequate for them.

Determinism depends on a discrete, continuous concept of reality. Our senses have developed to operate in a macro setting of Newtonian dynamics where determinism fits the logic of our senses. Now, with deeper investigation into the true nature of the universe of energy and matter, we find this interpretation of things weak, inadequate, incomplete and deceiving. The universe in the micro world appears nondeterministic or quantum; that is, noncontinuous and indiscrete. New thought dictates new concepts of biology and thus medicine. It is the major thesis of this document that life processes are indeterminate, relying on quantum dynamics for interpretations.

What we are talking about is the description of a physics that can be used to describe every element of our universe from the beginning of time. The search for this type of universality of principle has been the search of physics itself. Other cultures have developed philosophies of thought, as they tried to analyze this same dogma.

The ancient Hindu culture has a unique explanation for the universe in terms of its physical laws. The Hindus believe in the god Brahman. Brahman wakes up at one time, and this is the start of the universe. He goes through an entire day, which is the day of Brahman, and is the existence of the universe. Then he goes to sleep, which starts the entire night of the universe, or the night of Brahman. The next day he awakens again, and thus starts a whole new universe.

The day of Brahman is thought by the Hindus to be approximately 150 billion years. The age of our universe now is 15 billion years, or roughly one tenth of the day of Brahman. At this point in time, when Brahman falls asleep, the processes are reversed, and the occurrences of the day of Brahman are recycled through the night of Brahman. Each time Brahman awakens and a day starts, a whole new universe starts, with a whole new set of laws and dynamics. Within the first instants of waking up Brahman decides the laws of the universe that will be in existence through the day and night.

Modern physics has found that there might be enough matter in the universe, where a similar type of approach might be described to parallel that of the Hindu belief. If there is enough matter in the universe, the universe now is expanding. What seems to be entropy, as everything races away from each other, might not be so

¹ Lancet 1983; ii: 971 (letter).

entropic. If there is enough mass, the gravitational pull of this mass will slow down the process, and at one time stop it, and thus reverse the process. The expansion of the universe might be the day of Brahman, and scientists estimate that 150 billion years might be the age of the universe. At that point it would turn around and go back, and all the matter would start to pull on itself and condense the universe, which would perhaps make the night of Brahman.

At this point some scientists have speculated that the day of Brahman might be a cause-and-effect universe, and that the night might be an effect-and-cause universe. The end-all occurrence would be the final compilation of all the matter into one ball, condensed down into the gravity. No longer would there be electrons, protons, neutrons; but all one ball of mass. This one ball of mass would be all there is; the universe would be no more. Then this entire collection of gravitational pull would not explode, but implode into a new universe, and thus start a new day of Brahman. Modern science might one day agree with the Hindus.

This book is dedicated to finding an analysis of the quantum principles that exist in every piece of matter in this universe that allow it to play a part in biology. Within the first seconds of the birth of this universe a type of order was set down into the basics of the matter itself. A proton is 1,836 times the mass of every electron. This type of order was imparted at the first instants of the universe. Every bit of matter, thus, was programmed into some type of law, so that it could take part in the universe, and also take part in biology.

In this book we will analyze some of these laws and the mathematical relationships through our contemporary physics. Not in the antiquated physics of modern medicine, but in the new physics of a new medicine; that of a quantum biology.

The basic proposition of this quantum explanation of biology brings with it the problem of indeterminacy. For events below a certain size or grouping will be quantic. And quantic events have indeterminacy. We will show that Biology is intrinsically dependent on quantic events. But if indeterminate, is biology random? The answer is indeed not. In fact biology is not at all random. The indeterminate events are under some control that defies thermodynamic understanding. The effect must pervade some subspace dimensions, to be able to effect systems at a large distance. So we must explain subspace connectivity to fulfill our quantum biology. The stage is set so now let the play begin.

The New Physics and the New Biology

In subatomic physics, statistical analysis is not valid. Quantum physics dictates that events happen in discrete jumps-- not half or partial steps. This analysis is measured in systems shifts and hermitian matrix dynamics. A quantum dynamics dictate action in an indeterminate but controlled manner-- statistical mechanics is incomplete for biology. The key to this quantum order is the energy dynamics.

Our discussion is going to focus on *energy*-- subtler forms of energy than those to which attention is usually paid. The photon and virtual photon will be expanded as a key in understanding biology.

What is the difference between a living being and an inorganic object? One important difference is the entropy equilibrium into which inorganic objects fall. A glass, for example, will assume whatever temperature prevails around it. When an object is dead it obeys the laws of thermodynamics, when a living organism dies it returns to the world of thermodynamics. The laws of thermodynamics are the laws of death.

A drinking glass is governed by the second law of thermodynamics, which states that everything is becoming less and less organized or concentrated-- that everything is becoming homogenized. The glass may be very cold to begin with (e.g., 35 degrees F), but put it into a warm room and the coolness soon dissipates and becomes less concentrated, becoming distributed evenly in the surrounding environment.

The human body, on the other hand, will resist (to an extent) the prevailing temperature by remaining at 98.6 degrees F even if it is very cold or very hot around me. My body is now struggling to maintain a precise core temperature of 98.6 in the face of the cool (70 degrees) temperature of this room.

Brownian Motion prevails in the molecules of an inanimate object. This means that they are constantly vibrating in a random pattern. They are entropic (randomly moving), and fall under the purview of mechanistic analysis.

The molecules making up a living organism, however, are not subject to Brownian Motion, and are under quantum order. When a cell dies (due to radiation, toxins, or trauma) the molecules of the cell shift to Brownian Motion as they switch from quantum control to entropic deterioration.

Mechanism, thermodynamics and entropy are thus most relevant to inanimate objects, while quantum dynamics are most relevant to living systems. The quantum dynamics rest on factors of energetic, photonic, magnetic and vibrational elements-- in addition to the chemical ones. For every shift in quantum levels photons (light) must be absorbed or released. Photon control is dictated by electromagnetic fields which become critical to life.

If we compare a cell from my toe to a cell from my cheekbone, we'll find on gross analysis that they're completely different cells. Yet, if we look deeper, we'll find that the DNA of the two cells is the same. The DNA of one cell is identical with that of another cell.

Further, if we implant the toe cell into the cheekbone and wait awhile, we'll find that it is no longer a toe cell. It enters a new bio-quantic field and slowly becomes a cheekbone cell.

When a plastic surgeon rebuilds a face he/she will borrow tissue from other parts of the body and incorporate it into the forms under construction. In order to rebuild the lips, for example, tissue is selected that has some resemblance to lip cells -- say, cells from the cervix. Cervix cells, when sewn into the lips, will start becoming like lip epithelial cells. If the patient is healthy and the energy field is right, within six months to a year they'll become lip cells.

The DNA of each cell has the information necessary for that cell to have the characteristics of any cell in the body. Then how does the DNA instruct a certain type of cell to have the *specific* structural and functional characteristics it has? The answer given by biochemists is that genetic information is selectively expressed; whereas in the toenail cell, all the information that would allow that cell to be a cheekbone cell, a brain cell, etc., has been repressed. The only instructions that are allowed to get through are those that cause the cell to be a toe cell-- even though it has the potential to become many different types of cell.

Biochemists believe that the key to genetics and DNA function lies in the base pairings and the chemical reality of the double helix. The idea that unseen or invisible fields affect life is difficult for conventional scientists to understand. For example, the average biologist would contend that anything that exists has weight and therefore, if a television set is weighed when it is on vs. when it is off-- since there is no change in weight-- that nothing has been added to the television by being on. That biologist would have a difficult time accepting the wave or field interaction of electromagnetic waves or photons. Few biologists understand photon and information dynamics.

Marconi invented the radio in 1895. Many people refused to use it-- or even to believe that it worked. They could not accept the idea of invisible waves. With general technological development came a gradual acceptance of such ideas in most areas of study. Unfortunately, though, the scientific community has been sluggish in accepting the reality of wave and field interactions as critical affectors of biological phenomena. Nonhertzian or scalar waves penetrating subspace is just as threatening today as the radio waves of yesteryear.

Embryologists have direct experience with life fields. After fertilization tissue growth in the embryo proceeds in a specific direction. If the embryo is cut and chemicals removed it can regenerate back to its old direction. If we cut a magnet in half we have half the chemistry but two *whole* fields. Fields cannot be cut or dissected. If the embryo field is altered or destroyed by radiation or magnetism the embryo will grow in inappropriate directions. Thus the embryo is developed not under chemical law but energetic dynamics, where energetic fields dictate growth.

Earlier in this century a French researcher named Gurwitsch, detected radiation emanating from living tissue. He called this mitogenic radiation, because of its effects on mitosis.

In the 1930s the Gurwitschs found that cells could influence each other through glass-- without chemical interactions. A type of electromagnetic radiation that was like light or was light was discovered.

James Isaacs and this author have duplicated this work: onion cells were placed in one sealed test tube, and onion *tip* cells (cells undergoing rapid mitosis) were placed in another. The two test tubes were placed 3/4 of an inch apart. The onion cells closest to the tip cells were found to be stimulated into mitosis. If the mitosis of the tip cells is altered via DNA mutation-producing substances or radiation, the mutated pattern will be reflected in the onion cells. Thus DNA could produce mitogenic rays which could influence other cells (see Chapter 8).

The mitogenic radiation was determined to have frequencies of 10^{12} Hz. to 10^{15} Hz., covering infrared through visible rays-- bordering on ultraviolet. Cancer cells gave frequencies of below 10^{10} Hz.

As we study this phenomenon we will show in our books that modern medicine has not been based on a true biology. Modern medicine has been based on a chemical perspective of Newtonian forces. Biology is a quantum event that demands a new medicine to be developed. This new medicine is already researched, studied, taught, legal, and has hundreds of thousands of practitioners. This book is but a small part of the writings on this

subject. Our quantum biology series is a five-part treatise, which includes *Subspace Quantum Biology*, *Bio-Quantum Matrix*, *Quantum Vibrational Medicine*, *Quantum and Subspace Biophysics* and the *Quantum Energetic Medicine Dictionary*. Now these texts are combined for easy reference. Our other books validate the legal experimental nature of this new medicine, and the "how to" of this medicine. The International Journal of the Medical Science of Homeopathy offers scientific evidence of the scientific and clinical proof of homeopathy.

Light, Radiation, and the Nature of Physical Existence

The light that issues from light bulbs is incoherent light. That means it's going off in every direction. The sun is also an incoherent light source: it emits light in every direction.

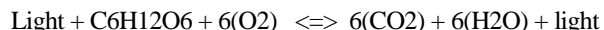
A laser, on the other hand, emits coherent light. It has organized the radiation, so to say, into a concentrated, focused beam-- a demonstration of coherent light.

We can take non-coherent light and put a diffraction grating onto it. That means that we take a piece of paper with a couple slits in it and hold it up to the light; or, we can take a prism and hold it up to the light. The diffraction grating separates the light into different bands, and you get a rainbow effect.

To study the radiation issuing from DNA, diffraction gratings were used. A Princeton researcher named Harvey also performed an experiment with onion cells, similar to the one described above. He removed the diffraction grating and achieved the same results. He thought that light needed focusing: since the focuser-- the grating-- was removed, light (electromotive radiation) could not be responsible for the results. His conclusion-- unfortunately for students of the New Biology-- was that mitogenic radiation was unimportant.

The laser had not been developed at that time. The existence of coherent light was not known. As it turned out, the electromagnetic radiation energy issuing from DNA is coherent. It's not scattered. Being coherent, a diffraction grating was not necessary. Coherent mitogenic radiation needs no focusing. DNA is a receiver and transmitter of laser light.

Let's examine now one of the key equations of life: the oxidation of glucose. Glucose is six carbons, twelve hydrogens, and six oxygens: C₆H₁₂O₆. Animals take in oxygen, with which the glucose is oxidized. The product is carbon dioxide, water, and electromagnetic energy-- or, light. Here's how it looks as an equation:



(See *Bio-Quantum Matrix* on Chemiluminescence).

The chemistry of this has been studied and understood for a long time, but the last item on the right-- the *light*-- has not. It is well known that plants take in light during photosynthesis, but that light which is given off by animal bodies (all of us!) has received little attention. Chemiluminescence is studied as a small part of biology. It has not received the attention it deserves.

The satellites that transmit TV pictures run on 10⁻¹⁷ watts. Our brains transmit at 10⁻⁹. Therefore, our brains' transmissions are much stronger than those of satellites. Satellites, however, do not emit coherent radiation. They send out a beam that widens, and anything that widens is incoherent radiation.

Gerwich found that brain tissue sends out more electromagnetic radiation than any other cell he could isolate.

A Review of this work is more thorough in future chapters.

The nucleus of an atom is made up of protons and neutrons and other particles. If we took the nucleus of an atom and expanded it to the size of a marble, the electrons around it would be orbiting anywhere from 300 yards to a mile away. That gives you an idea of how much empty space there is in seemingly "solid" material objects-- including our bodies. If we compressed my body to get rid of *all* the vacant space at the atomic level, my total mass would be much smaller than a bacterium. This empty space abounds with virtual particles and photons as theorized in QED.

To study only the chemistry of the body (the physical "stuff") while ignoring the "empty" (field) part may give us a very distorted view, since it is in the "empty" parts that all the subtle energy fields are working-- affecting the physical "stuff". The invisible quality of life, the interactions of electromagnetic and static electrical fields, must become the focus of biology.

A new perspective on physics that must be brought up here in our analysis of biology is that of quantum dynamics. This new quantum perspective, which has displaced Newtonian physics in its analysis of subatomic

particles brings with it several different postulates that must be analyzed and understood for us to use a quantum mechanics in biology.

In 1899 a German physicist, Max Planck, presented his views on quantum physics. He called it "quantum" because of the idea of a distinct quantity of the subatomic particles. Thus the photon in its effect on electrons has a distinct *quanta* reaction. In dealing with our quantum biology we will need to understand some of the basic postulates of this new form of physics. The idea of a discontinuous universe is the first thing we must understand. This will later be utilized in the mathematical relations, and will show us why statistical dynamics and thermodynamics are incomplete in their understanding of biology. They cannot account for some of the *quanta* of small dynamics, such as what can happen in the small, controlled environment of the cell.

Another criterion of our quantum world is that of the wave function vs. particle dynamics. This is explained in the Schrödinger equation. There is a time-dependence relationship of a wave function that exists in the movement of absolutely anything in the universe. In the macro world this wave type movement is extremely small, whereas in the micro world of subatomic physics, and that within the cell, this wave function is indeed important.

Another basic postulate in quantum mechanics is that of the dynamics of the things that can be measured. In a Hilbert space vector position and momentum can be charted via a hermitian operation. Angular momentum and energy are other factors that can be measured within the field of quantum dynamics. Time, ortho-normality, and probability distributions will also come into our analysis and play a large part in our quantum dynamics.

Another very important part in this dynamics is that of uncertainty, or indeterminacy. This is to say that in the things that we can measure through the dynamics of Quantum Theory we are uncertain as to what totally is happening. This uncertainty is not just a limitation to our theory, but is locked into the heart of it, in that we cannot know all of the factors of a situation that we are measuring.

Another basic postulate that goes hand in hand with this is that if we measure anything within a quantum set, we affect other parts of the dynamics. Measurement of an observable item will generally cause a drastic and uncontrolled change in some other part of the system.

Also what must be dealt with is that of the relativistic components of the system, following Einstein's theories of relativity. We will also find that this quantum action is photon-dependent, as a photon makes up the basic quanta of energy that allows anything to happen. The virtual photon can come into existence and affect things at a distance.

We make it a basic treatise of this book that the factors of biology follow a quantum dynamics, and thus cannot be determined and analyzed in a Newtonian, thermodynamic or statistical way (see *Bio-Quantum Matrix*).

This indeterminacy is very threatening to some scientists, mostly those with psychological disturbances of over-accentuated self worth. Indeterminacy is a threat to the power-driven ego. Indeterminacy fosters humility and reverence. This will pervade biology, and later, medicine.

Ions, Ionization Potentials, and a New Definition of Organicity

An ion is some atom, molecule, or particle that has a charge. Let's take a hydrogen atom, which has one electron and one proton. If we dissociate it-- pull the electron away from the proton-- we'll be left with a positively-charged proton and a negatively-charged electron. The proton and electron are then ions. Even a large stable molecule can lose an electron and then become an ion.

The electron is negative and the proton is positive. There is a fine balance between the forces holding the electron in and forcing it out. The centrifugal force (throwing the electron away from the proton) is equal to the sum of the gravitational and electrostatic forces of the proton (holding the electron in).

Ionization potential is the amount of energy it takes to pull an electron away from an atom. If we start applying energy that pulls the electron toward the proton we would upset the balance. Likewise, if we applied energy that pulled the electron away from the proton, the electron would eventually dissociate or fly off. This energy that shifts electrons could only be energy from photons.

There are many quantum levels an electron can occupy as it orbits the nucleus of an atom. At the ground state the electron is as close as it can be. If it gets any closer, or tries to release a photon and go to a lower level, it will become unstable and the electron will be absorbed by the nucleus. If an electron is at the highest quantum level; if another photon is absorbed, the electron will be freed and spin off-- rendering the atom an ion. Between the ionization level and the ground state are the quantum electron shifts of life.

Charged particles, such as electrons, create magnetic and static fields around themselves as they travel. This magnetic and static field production expends energy, and the electron path and velocity succumbs to the drain

of magnetic field production. However, an electron in its quantum orbit around the nucleus of an atom expends no energy. Electrons seek out these "safe" orbits-- those that do not demand energy expenditure.

Different compounds have different quantic potentials which they can absorb and release (see *Bio-Quantum Matrix*). Life processes seek to line up these compounds to take the "hot" electrons of glucose and use their energy in minute, quantic steps for needed energy.

The easiest quantic level to measure is the last one-- the preionization level. This is the ionization potential of a molecule. We can make a graph of ionization potentials. At the top of the graph would be a number of substances that are very easy to ionize, like hydrogen. Lower down on the list would be H₂O-- water-- which is a relatively stable molecule. Below that are molecules that are even more stable: nucleic s, plastics, xenobiotics, and others. Some of these compounds are extremely stable, and to ionize them requires tremendous amounts of energy.

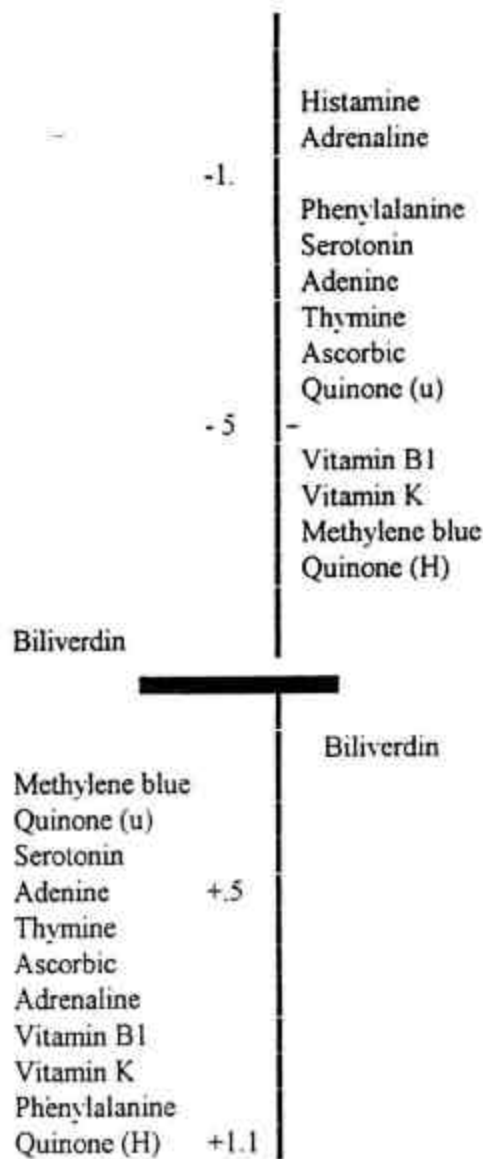


Figure 1. Ionization potentials. (K Scale)[from Szent Georgi's book on Bioelectronics.

This K Scale is a measure of the ease of ionization potential that an item can have. Many items, as we can see, will fall into this schedule twice, possibly even three times. This is to say that there are outer electrons with different ionization potentials. This charts the electron transport of many different items, as they share and transfer ionization along different lines (see *Bio-Quantum Matrix*). So in electron transport the electrons can be exchanged by compounds with close K-scale potentials and end in distinct locations.

Every compound in the living organism has to fall within a short range. The diagram above illustrates some ionization potentials. So chemical in biology are within a set of K scale extremes. An item too acid or alkaline is incompatible for biology. The chemicals in bioelectron transport will have to be lined up correctly for transport to occur.

Pure, 100% acetic acid is a poison. On our ionization potential graph it would be near the top (very readily ionizable). Now, although pure acetic is technically an organic compound (contains carbon), and is found in natural foods (such as vinegar), it is poisonous unless we dilute it. The dilution with water will bring down the ionization potential to a level that is again compatible with life and health. (Fortunately, in its naturally-occurring forms such as vinegar, it is already diluted). Many compounds are only poisons at certain dilutions and nutrients at others. Some compounds are slightly outside the acceptable range but can be buffered by the system and stabilized for use. The buffer system of the body is intricate and very sophisticated.

Hydrochloric acid is an inorganic acid, and in its pure form is also high on the ionization potential graph-- and incompatible with life. However, if we dilute this sufficiently, it will resemble our gastric juice, a substance that enhances digestion and thus favors life. The job of a chemical and its position in biology is critical.

The important question is not whether a substance is technically "organic" or "inorganic", but where it falls on the ionization graph, into or out of that small segment of the graph that represents substances that can be ingested and used by living things. When life forms have too much contact with substances that fall outside this segment they are injured, fall sick, and eventually perish.

The word *organic* has been selected by chemists to designate all substances containing carbon, including deadly poisons and many substances profoundly incompatible with life. This nomenclature has created some confusion, since the primary definition of the adjective *organic*-- of, pertaining to, derived from, or having the properties of living organisms -- is much broader than the criterion of the chemists (presence or absence of carbon). Although the latter has been a useful definition for some types of research (organic chemists have made fabulous contributions to our knowledge), the value of a substance on the ionization potential graph reflects more of the original spirit of the word *organic*.

Since it is not likely that the chemists (and, for that matter, all scientists) will defer *en masse* to our wishes, abandoning their peculiar appropriation of the word *organic*, perhaps we could coin two derivations of it: organic/I and organic/II. The first would refer to the first and primary definition of organic (or qualities, attributes, and indices relatively close to it-- such as the ionization potential), and the second would refer to the organic chemists' definition of organic. Scientists have lost perspective on chemistry because of the teaching analogies used in chemistry. The Chemistry classes use hard balls and rods to demonstrate the chemistry of atoms and molecules. These objects are hard and of substance, so the student sometimes sees chemistry as an exchange of hard matter.

We now know that instead of hard object interaction there is actually an energetic field interaction of particles and the quasi field of partner particles that interact in a many body interaction. When bio molecules interact as in nutrition or reproduction etc., what actually happens is that a field of quasiparticles of the nutrient interacts with the quasi particles of the cell and a very mathematical quantum interaction ensues. If the chemical quasi quantum field of the nutrient is compatible with the quasi quantum field of the cell nutrient processing occurs in precise mathematical ways. If the fields are mathematically incompatible or prohibitive, then non absorption can occur. If the incompatibility is extreme then poisoning can occur. If we look past the chemical ball and rod demonstration and study quantum dynamics we can arrive at a new biology of quantum mathematical preciseness. To this end this book is a starting step.

This is a treatise on a new type of biology and a new type of medicine. Within this document we outline some of the different guidelines and rules for a new thought process. This process lays the philosophy of analysis in understanding biology, and thus in understanding medicine. It is not the purpose of this document to offer absolute medical criteria. It is the purpose of this document to offer a philosophy of medicine that shall be echoed through the philosophy of biology. To understand more about medical ramifications that can result from this document we would like to point the reader to the "New Biology", "Natural Repertory of Dr. Nelson", "Physical Diagnosis", and "The Natural Compendium, and Materia Medica". Most important is the articles collected by The International Journal of the Medical Science of Homeopathy, that review the ever increasing scientific work in this field. This will allow us to develop and analyze a new medicine in these other documents. For as we study the

field compatibility of biology we see that only nature can make things compatible with nature. The limitations of the chemical dominated past of rods and balls must be transcended.

But now let us return to analyzing the philosophy and giving medicine more tools of energetic analysis.

Electron Poisoning; the Simplest Units of Life

If we analyze oxygen chemically, we will find that all oxygen atoms are, by "chemical" definition, exactly alike. However, because of these varying combinations and qualities of electromagnetic fields, each oxygen atom is actually energetically unique. Although this is well-known, most chemists still find it convenient (and it *is* convenient, for some purposes) to consider all oxygen atoms identical. As yet, there is no excellent system for classifying these different oxygens.

If we take an electron off the oxygen it is then ionized. Life depends on this ionization shift and quantum interaction. All life processes thus become quantum-dependent, accounting for the reproducibility of biological experiments.

In the nucleus of the oxygen atom there are eight neutrons and eight protons. There are two electrons in the first shell of oxygen; their orbits are circular. The next group of electrons form the other shell; their orbits are elliptic.

Elliptic orbitals have a major access and a minor access. These will generate different fields. A vast increase in quantum potentials is possible, depending on the position of the electron in the ellipsis.

Each of these electrons has a spin² about it which creates a different electromagnetic field. Even a relatively simple atom, such as the oxygen (eight electrons), has an astronomical number of possible electromagnetic field configurations. The atom thus becomes a sort of microcomputer system with an incredibly powerful main memory in its quantic levels.

Nature poises electrons and protons in specific quantic areas, according to information-storage needs. In the process of photosynthesis plants take in photons from the sun and convert mineral elements to higher quantic states-- specific states relevant to information-storage needs.

Calcium, in the context of inorganic materials such as dolomite, cannot be properly used by humans. On the other hand, the calcium found in an organic context-- say, celery-- is primed and suitable for absorption and use by the animal body. The quantic pattern needed for perfect absorption and use is terrifically complex. Dr. Isaacs's hermitian matrix³ illustrates the pattern; the probability of achieving it at random is over 100 trillion to one (see *Bio-Quantum Matrix*).

It can be seen, then, that synthetic substances for internal use (if an accounting has not been made for the quantic patterns that ensure biological compatibility) can be useless or worse. Although the matrix could, theoretically, allow for appropriate quantic placement in the production of synthetics, the actual process would be laborious and exorbitantly expensive. Thankfully, these patterns *have* already been accounted for-- precisely and elegantly-- by nature! This, ultimately, is the rationale for the use of natural foods and food extracts.

There seems to be about 600 different activities involving proteins going on in the *E. coli*. In the vion there are about 10⁷ different compounds. The *E. coli* is one of the simplest forms of life on the planet. It is a vion.

In Dr. Isaacs's landmark book on the subject of quantum biology, known as the "Complementarity of Biology", he refers to the "bion" as the basic living unit. This is the minimal amount of mass needed to actually be a living thing. To be a living thing it must qualify by being able to reproduce and metabolize on its own, independent of other help.

Since the term "bion" was taken by other researchers, including Reich, Isaacs suggested adapting another term. For the purpose of this book, we use the term "vion", and from now on we will use the word "vion", which will mean the same thing as Dr. Isaacs indicated with "bion" in his book.

There are two fundamental characteristics of living things. The first is reproduction: the ability to reproduce in kind with less than one mutation per billion generations. The second is metabolism: ingestion of foodstuff and the transformation of it into energy for necessary functions. A vion is the smallest collection of compounds in energetic communication which exhibit these fundamental characteristics of life. *Rickettsia*, for

2 "Spin", in physics, refers to the momentum of subatomic particles.

3 The hermitian matrix, an exciting and unique way of conceptualizing biological phenomena, will be described and discussed fully in *Towards a Bio-Quantum Matrix*.

example, fulfill these requirements: they are the smallest particles of matter that can still metabolize and reproduce without external aid.

The vion can be likened to the chemical elements of chemistry. Elements can be joined to form molecules of great size and complex function. Likewise, vions can unite to amplify the range and variety of biological function. Isaacs' matrix-- a table of biological interactions-- can be likened to Mendeleev's periodic table of the elements. The introduction of the matrix into biology will open new realms of predictability and reproducibility in research (see *Bio-Quantum Matrix*).

The basic problem comes from a misguided concept taught by the balls and rod chemistry. The concept of this system misleads one to see the chemical interchanges as hard unyielding objects like billiard balls, when in fact the subatomic particles are indeed quasi energetic fields of vibration, angular, spin, orbital etc. energy. The interaction of a substance with the cell wall of an organism is an encounter of energy probability fields encountering each other. The billiard ball concept was good for instruction but deceived the thought from truth. The concept of the quasi particle is introduced in the book 'A guide to Feynman Diagrams in the Many -Body Problem' by Richard Mattuck (Dover Press).

The internal processing of the collective matter inside a cell is a mathematical non thermodynamic, nonlinear, quantic accounting and processing system. Here one enzyme in a large space is not randomly bounced around but is energetically directed for function to a specific area. At this area the quasi field of the enzyme interacts in mathematical ways with the proper substrate. Thus the cell must have a precise mathematical processing system of field management. The substance interacting with it must then have a specific range of energy field requirements for the cell to use it as nutrition. The proper way to describe these quasi energetic fields of the cell and the interaction substance is to analyse the quantic probability of the spin, orbital size, orbital type, quantum levels, temperature or molecular movement, voltammetry characteristics, resistance and conductance characteristics (trivector field), and a host of other energetic analysis. This would be best designed in a matrix for cataloging all of the criteria. The matrix of a cell would be descriptive of the cells processing of intercellular compounds. The boundary layer at the cell determines the interaction of the cell with outside substances. Thus figuring out this matrix is the ultimate goal of biology.

The ionized hydrogen atom (one proton without an electron) is the simplest unit of study in chemistry. Every other element is built on that, with varying numbers of protons, electrons and neutrons. Likewise, the vion is the simplest biological unit we can study, and every larger and more complex living thing is made up of varying quantities and qualities of vions. After moving to Budapest to work on my research I realized that two of my most important teachers were Hungarian. Having worked with both Selye and Szent Gyorgi I could now appreciate better their genius.

Albert Szent-Gyorgyi won the Nobel Prize for discovering vitamin C in 1937. In April of 1967 Dr. Szent-Gyorgyi, in the foreword to Hahn Selye's book, "In Vivo", wrote this:

"When I was a medical student, there was no Bohr atom, no orbitals, no quanta, no nucleus, no electrons, no electron microscope, and no x-ray crystallography. We only knew that there were about twenty amino acids and a similar number of sugars, and could classify roughly the main ingredients of a cell. Then these were wonderful achievements. Judged from our present outlook, then, we knew practically nothing. All the same we felt obliged to explain life, and he who said that our knowledge was insufficient to understand life was called a 'vitalist', or 'mysticist'.

"Now we know much more, and again try to explain life, molecular biology being the password. But we do not know, as we did not know in my student days, how many more sciences wait still to be discovered. Again, today we call him a 'mysticist' or 'vitalist' who ventures to say that our present knowledge may still be insufficient to understand life, and molecular biology may not be the last word.

"I do not mean to say that achievements of molecular biology do not deserve admiration. We have to know and to find out all that we can about molecules, quanta, and electrons to approach an understanding of life. But we must not forget that the molecular level is but one of many levels on the gambit of organization, and what we call life is an integral of all functions and all reactions."

As Szent-Györgyi points out, people who assume that present science is incomplete are labeled 'mysticists' or 'vitalists'. It is always an attack on the present-day ego, whatever the level of science, that the present-day medical establishment does not know enough about medicine to fashion its wares and design synthetic pharmacology.

After writing this book and developing a quantum idea of biology, we are brushed by the indeterminacy and uncertainty principles of Heisenberg. This gives us proof that whatever level our technology is, it will always be insufficient to absolutely know the factors of biology. Thus for the rest of time, anybody who studies biology

must accept himself as a vitalist and mysticist, and thus realize, in a reverent fashion, the completeness of biology and the incompleteness of their own philosophical and intellectual pursuits.

With this book we welcome to the ranks of mysticism and vitalism all the present-day biologists and molecular biologists.

As science progresses our guesses about biology become better and better, but we must always realize that they will always will be guesses. As Selye said in his book, "In Vivo", "Perfect knowledge of biology is unattainable by the human mind."

It is the purpose of this book to prove such a concept, which now puts naturopathy, or natural medicine as the only true choice of development of medicine for the future.

SUMMARY OF INTRODUCTION

- 1. MODERN MEDICINE NEEDS TO LOOK AT MORE ENERGETIC PHILOSOPHIES OF BIOLOGY.**
- 2. BIOLOGY IS BY NECESSITY ELECTRICAL, MAGNETIC, STATIC (TRIVECTOR) PHOTONIC, AND CHARGE-RELATED AS WELL AS CHEMICAL.**
- 3. MODERN MEDICINE IS RESISTANT TO NEW THOUGHT IN BIOLOGY.**
- 4. ALLOPATHY IS AN ANTIQUATED FORM OF MEDICINE. HOMEOPATHY CAN DO MUCH MORE WITHOUT THE RISKS OF DEVASTATING SIDE EFFECT.**
- 5. THE BALLS AND RODS CONCEPT OF CHEMISTRY THAT HAS BEEN TAUGHT FOR DECADES IN SCHOOLS HAS ACTUALLY DONE HARM, BECAUSE IT HAS PRODUCED THOUGHT PATTERNS THAT ARE UNWILLING TO ADAPT TO THE QUANTUM QUASI FIELD CONCEPTS OF MODERN PHYSICS. THIS ROBBS THE INSIGHT NEEDED TO TRULY UNDERSTAND THE BIO PHYSICS OF THE CELL AND OF MEDICINE. WHILE IT SELLS MORE SYNTHETIC MEDICINE IT MAKES FOR MORE IATROGENIC PHARMACEUTICAL DISEASE.**