

Chapter 1

QUANTUM BIOLOGY

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Throughout the years philosophers have debated the idea of determinism. Scientists such as Newton, Fahrenheit, and Democritus argued over the proposition that there was a deterministic universe consisting of small determinable atomic bits whose pathways could be calculated. Other philosophers argued for a more indeterminate universe in which free will and happenstance were more likely the rule. Many psychologists such as Carl Jung have argued on the idea of synchronicity as a force allowing for the idea of *indeterminacy*. Scientists such as Heisenberg and Planck developed an idea of physics based on an indeterminate reality. This has led to the sophistication of quantum theory in physics, which dictates that in the world of the extremely small there is an indeterminate process, and nothing can be fully predicted.

The science of this indeterminacy is known as quantum physics. The exactness of Planck's constant and the Heisenberg uncertainty principle have led to the development of electronic theory and quantum dynamics; explaining the fields of chemistry, electrodynamics, transistors, and many other scientific processes.

At the time of this writing it is apparent that the Heisenberg uncertainty principle is a tenet of physics. Other scientists maintain that there will be a method of determinism discovered in this small interval at a later date, when we learn more about the physical processes of the universe. However, it should be pointed out that even if such determinism should be found, there would still be an effective indeterminism due to the limitations of our science to calculate all of the variables.

This book is dedicated to the proposition that indeterminacy, via the Heisenberg uncertainty principle and other quantic processes, is integral to the field of biology. We will compare the thermodynamic entropy science of modern pharmaceuticals to the quantum controlled process of electrodynamics, to show that biology exists because of its quantic *control*-like nature, and resists the thermodynamics of random entropy. The mechanism of this control is conveyed over subspace dimensions and is energetic and polymorphic in nature.

The laws of thermodynamics are the laws of death, as we will find in our exploration of biophysics. The laws of life depend on a controlled nonrandom set of processes. The development of quantic biology will go a lot further toward unravelling the mystery of the living process.

Morowitz states: "Thus, in the ideal case, one should be able to start out with a quantum mechanical description of the atoms making up a cell, and by application of the principles of quantum mechanics, predict the cell's behavior." Such a description of a living cell is far from that realizable at the present state of knowledge.

Detailed atomic descriptions of the structure of a living cell consist of giving the position of each atom and the bonds between neighboring atoms. The functional description of the living cell thus consists of following the time dependence of the detailed atomic description. In view of the complexity in the living cell; that is, the number of atoms, no one can hope to give us as detailed a description as this. Rather, one assumes that laws governing aggregates of atoms will simplify the description and provide the laws of cellular biology.

Heisenberg's uncertainty principle states that the uncertainty of a particle is greater than or equal to the possible position times the possible momentum times Planck's constant.

$$\Delta p \Delta Q \geq h/4\pi$$

$$h = 6.67 \times 10^{-27} \text{ erg sec.}$$

A fact in biology that has been overlooked is that this is an inequality, meaning that the uncertainty can be greater than or equal to. Many physicists have related to this as an equality, not an *inequality*.

In physics we talk about the transition period from subatomic quantum laws to the macro world of Newtonian dynamics, hinging on thermodynamic Gaussian principles. This transition state is usually thought to happen in the world of subatomic phenomena. It is one precept of this book that due to the inequality of the Heisenberg uncertainty principle and the peculiar photodynamics of biology, the same indeterminate and quantic principles continue beyond the atomic and the molecular level to the cellular and organic processes of biology. This quantic pressure does not happen in inorganic or nonliving substances, but does happen in the dynamics of

biological tissue. If this biological tissue should lose its life force (die), then the tissue would fall back into thermodynamic and Gaussian principles.

In this book we will introduce such concepts as the bio virtual photon principle of life, allowing for the changing of electron states; the hermitian matrices, giving us the predictability of the pattern of such intermolecular and subatomic processes; long-range forces, mitogenic radiation, the vion, subspace polymorphic transfer, and other quantic processes.

Dr. Isaacs brings up an analogy with Laplace's calculating demon. The concept of the demon was that we could satisfy the following steps of: first, giving this calculating demon the necessary mechanical laws and subsequent initial values relating to the atoms and molecules of the universe; second, giving an abstract ability and some biological knowledge; third, giving the Laplace's calculating demon an ability to allow for statistical averaging in terms of physical and chemical generalizations, as with Born and Brillouin, the initial ties of position and momentum of a purely mechanical system having an inherent spread that increases with both time and observation; and fourth, adding that the demon must be further humanized by limiting his power of statistical averaging and inference.

Laplace postulated that his calculating demon would then know every action of every thing in the universe. Isaacs makes the treatise that Heisenberg, who allowed for indeterminacy, brought up the idea of a quantum theory which would destroy the feasibility of Laplace's calculating demon. Heisenberg said, "It may well be that a description of the living organism that could be called complete from the standpoint of the physicist cannot be given, since it would require experiments that interfere too strongly with the biological functions."

One of the precepts of quantum physics is that as we go into smaller and smaller measurements, our techniques of measurement interfere with what is being measured. According to Bohr's correspondence rule, there are definite limits to what we *can* measure and what we *can fully* know.

Isaacs postulates that in living biological units the uncertainty product of the conjugate variables of molecular motion is increased at ordinary temperatures and pressures. Molecular motion in these biological processes is thus mechanistically indeterminate. This molecular indeterminacy engenders new laws for living processes. Indeterminacy must be considered in a new classification of living beings. This is to say that the description of biological processes cannot be reduced to statistical averaging and cannot be approached through thermodynamic or entropic modes of calculation. Only with Quantum dynamics and the uncertainty product can we analyze the forces of biology. To understand the interaction of the organized compounds in a cell we must chart the quasi energetic nature of these compounds. This evolves throughout this text.

What happens *in vitro* (in the test tube) falls under the laws of thermodynamics, and must obey Boyle's gas laws for the interaction and colliding of different molecules. This is a statistically determinate process, which accounts for Brownian motion and other such effects. Inside living tissues we do not find Brownian motion; we find that there is a different effect, a more controlled process, a passage of the molecules *not* in a random process, but a controlled process. There are no continuous steps, but *discrete jumps* of energy states. Quantum theory seems to apply.

Thus the biological process within the cell is similar to the quantic process within the atom. Life exists by quantic rule and behavior.

Dr. Isaacs makes a point for the *vion*, which is a discrete living unit but not always a cell. Vions are more fundamental than cells. A vion might be a simple cell such as rickettsia or E. coli. Most cells are composed of different vions, the vion being the smallest amount of matter that an organism can be made up of and still have the processes necessary for life (reproduction and metabolism). Reproduction means information conservation dependent on genes, chromosomes, and other genetic processes, and metabolism controls such processes as mass and energy transport, relying on hormones, enzymes and coenzymes.

We point out the need for long-range additive electromagnetic forces dependent on the exchange of virtual photons, crucial for the exchange of energy and the exchange of information at long ranges, depending on photon transport, rather than electron.

Development of computers depending on photon transport will open the door for a much deeper understanding of the biological process. To date, the biological process has been looked on as an electron transport and chemical process. Until we can open the door to the electromotive exchange of light (photons) in the cells and the exchange of mitogenic radiation, biology will be locked in archaic misunderstanding. The understanding and development of biology will come from the description of mitogenic radiation, the electromotive force of light and its dictates in plant and animal physiology (see Chapter 8). Feynman makes the account for a quantic system to develop these virtual photons; such a system is definitely accountable for biology.

Changes in the states of living units (vions) are predicted and controlled via the radiation of virtual photons. This radiation has been measured and calculated, and is found to be coherent within a quarter wavelength, so that mitogenic radiation also is similar to coherent laser beam technology. The transformations employed in cybernetics will be used in quantum selection rules to allow for the understanding of the mechanical and energetic interchanges, which allow for the existence of vions. We will make the treatise that biology, through quantum interchanges of the conjunctive variables and transformations, can allow for control of energy, mass, heat, charge, electromotive force, virtual photons, and so on through the continuum of time and space, in the dimensions of our perception and beyond.

We also will make the treatise that the quantum biological process is similar to the biological process, and that the actions within atoms and subatomic units are very similar to the quantic interaction of exchanges within the biological units. Transformation theory will be discussed in terms of a hermitian matrix for the exchange of energy states within these quantic interactions, predicting the discrete energy jumps that are accounted for in biology.

Homeopathy will be introduced through an electronic analogy of the law of initial values vs. the Arndt-Schultz law, to show the double-knee effect of how homeopathic therapeutic action can influence this virtual photon flood of the body. The trivector effect of resistance, voltage, and amperage will be reviewed of homeopathy and compatibility with patients. Homeopathy will be shown, along with electro-diagnostic techniques, to be the new advent of modern medicine.

We will counter Brownian motion in *in vitro* vs. *in vivo* testing. We will study the pH criteria of not only proton pressure but also electron pressure in a biological system. We will point out the need for statistical dynamics in large situations, and the invalidity of such dynamics in small cellular processes.

These profound revolutions in biology were introduced by Dr. Isaacs in the 1950s, in his book, "Complementarity of Medicine", a book that has been discovered and retranslated in this monograph to account for, explain, and open the door for deeper understanding of this largely ignored book.

Finally, we wish in this treatise to bridge the gap between biology and philosophy and to deepen our respect and reverence for the biological process and the grand factors of living in God's natural world.

Another thing that should be pointed out at this juncture is the inappropriate philosophies behind modern allopathic medicine. Modern allopathic medicine has been brought up with the idea of working against the body; therefore the word "allopathy", from the Greek "allo", meaning *against*. If there is a histamine reaction in the body, then an allopath would use an anti-histamine or similar agent. The entire field of allopathic pharmacology is one of using mostly synthetic compounds to block or artificially stimulate processes within the body. The philosophy of the allopath is that the body is stupid, and the physician, smart. Modern allopathy and pharmacology have their basis in the statistical theories of thermodynamics. The theories in the development of the processes behind this allopathic philosophy all can be attributed to reductionistic, allopathic and synthetic development.

It is part of the treatise of this book that this type of medicine is not only severely flawed but also extremely archaic. The development of a new type of biology, a quantum biology, would dictate in force the development of a new type of medicine, a quantum medicine.

As we expound on the precepts of this book we will find that other forms of medicine that are legal in the United States, such as homeopathy, naturopathy, chiropractic, acupuncture and others work with balancing human energy and subtly changing different factors so that the body can heal itself, increasing the dynamics; not working against, but working for and with the body. These types of medicine will become more prolific as Americans realize that they truly do have the freedom to choose these legal maneuvers, even though strong forces try to prevent this freedom of choice. In light of our new science allopathic medicine will have difficulty in justifying its reductionistic phenomenological observations and statistical background. Reductionism is more the problem than the solution.

SUMMARY

1. **THE LAWS OF STATISTICAL THERMODYNAMICS ARE THE LAWS OF DEATH. THEY ARE INAPPROPRIATE TO EXPLAIN INTRACELLULAR LIFE.**
2. **QUANTUM THEORY IS MORE DESCRIPTIVE OF LIFE.**
3. **THE INDETERMINACY PRINCIPLE OF QUANTUM THEORY IS AN INTEGRAL PART OF BIOLOGY.**
4. **PHOTONS AND VIRTUAL PHOTONS ARE CONNECTIVE TO ALL QUANTIC CHANGES AND THUS ARE ESSENTIAL TO BIOLOGY.**