

Chapter 13

A NEW DESCRIPTION OF NEURAL ACTIVITY

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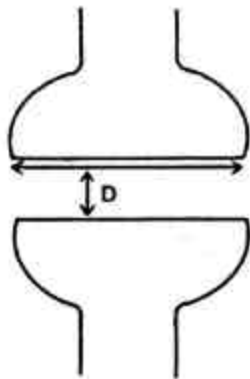
**What is the quantic need for neurons?
How do neurons work from a quantic perspective?**

As we have pointed out in our description of cellular phenomena, there is a need for indeterminacy and a quantic description of the processes within the cell. Inside the cell there are given input/output criteria, which are handled in a molecular transport process by a quantic transform machine. This is the quantic indeterminate machine of life.

As we proceed to more multicellular organisms, there becomes a need for more quantic interchanges to be developed in communication between the vast number of cells. Viewing the metazoan organism, or higher plants, we will also find that systems of intercellular communication must be developed that also will be quantic in nature, follow the set of transform processes guided by quantum theory, and thus have a degree of indeterminacy. As we have pointed out, the mechanical nature of the muscle sarcomere and the nerval action of the synaptic cleft are part of this phenomenon.

In setting up these intercellular communication processes, nerval tissue development starting at the noto chord was one of the first integral, intercellular techniques for communication. There is the development of the synaptic cleft along these neurons, which falls under the indeterminacy principle of the size of the synaptic cleft in the transport process. By putting mathematics to the size of the molecules and the size of the synaptic cleft, we find that our development of knowledge of the mass and position will fall under the Heisenberg uncertainty principle. Thus we are limited in our ability to know the actual transport process within the synaptic cleft.

As we have mentioned many times in this book, the process inside the synaptic cleft is one of an indeterminate matrix. Thus it falls out of the range of Newtonian entropic predictability (see *Bio-Quantum Matrix*).



ACETYL CHOLINE 200 ATOMIC WEIGHT

200

$$\frac{200}{6.02 \times 10^{23}}$$

$$6.67 \times 10^{26}$$

$$\text{) MASS @ (VELOCITY)}^2 \text{ @) POSITION} = \frac{6.67 \times 10^{26}}{4B}$$

$$(3.3 \times 10^{22} \text{ grams}) (1.0 \times 10^{-2} \text{ sec})^2 (1 \times 10^{-8} \text{ cm}) = 5.3 \times 10^{-27}$$

$$3.3 \times 10^{-34} \dots 5.3 \times 10^{-27}$$

D = 1 Angstrom = 10^{-8} cm

Velocity is speed of neural transmission

= 10^{-2} sec.

In the indeterminacy of the physics of the synaptic cleft the neural transmission process falls under indeterminacy.

As we dramatically increase mass, we can demand action in the synaptic cleft. This allows for the phenomenon seen in synthetic pharmacology, in which pharmaceutical agents must be used in much larger amounts than those in which they occur naturally. Here the amount of lock-and-key and the amount of mass of a certain hormone can enter into the synaptic cleft and demand action. This demanding action is not a natural process, and does not fall under the laws of indeterminacy; some have short-circuited the laws of indeterminacy and made the system a determinate, mechanical system, which fits the paradigm of the synthetic chemical companies. Since they do not understand life and its quantic interactions, they can sit back and enjoy the Newtonian effects of engaging in a super-chemical system, even though this unnatural phenomenon upsets the cybernetic balance and interferes with natural feedback control. However, the short-term symptomatic gains financially outweigh the long-term system disruption.

WORLD-WIDE/YEAR	SYNTHETIC PHARMACEUTICALS	NATURAL & HOMEOPATHIC PHARMACEUTICALS
Sales	\$300 billion	\$30 billion
Profits	\$150 billion	\$1 billion
Malpractice Suits	\$50 billion	\$100,000
Malpractice Settlements	\$30 billion	\$10,000
Percent of Damage Risk	6%	.0000003%

This addition of a super-flux of a chemical demanding action of the synaptic cleft is also highly profiting, since these chemicals can be synthetically derived and the synthetic process can be patented.

This is why the need for the quantic indeterminacy principle is one that sets up the paradigm for a new biological perspective. Neural tissue needs to communicate. The various elements of this intercellular communication must be within the quantic flux of indeterminacy (to reference the mathematical nature of the synaptic cleft).

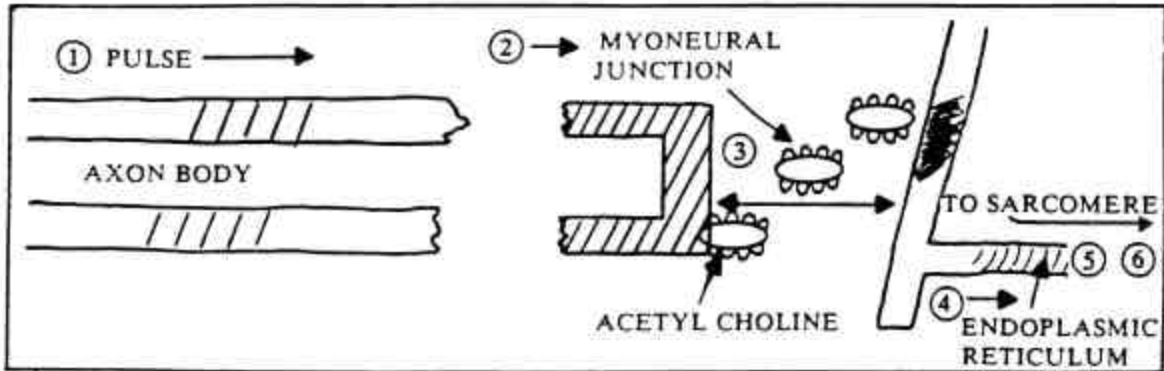
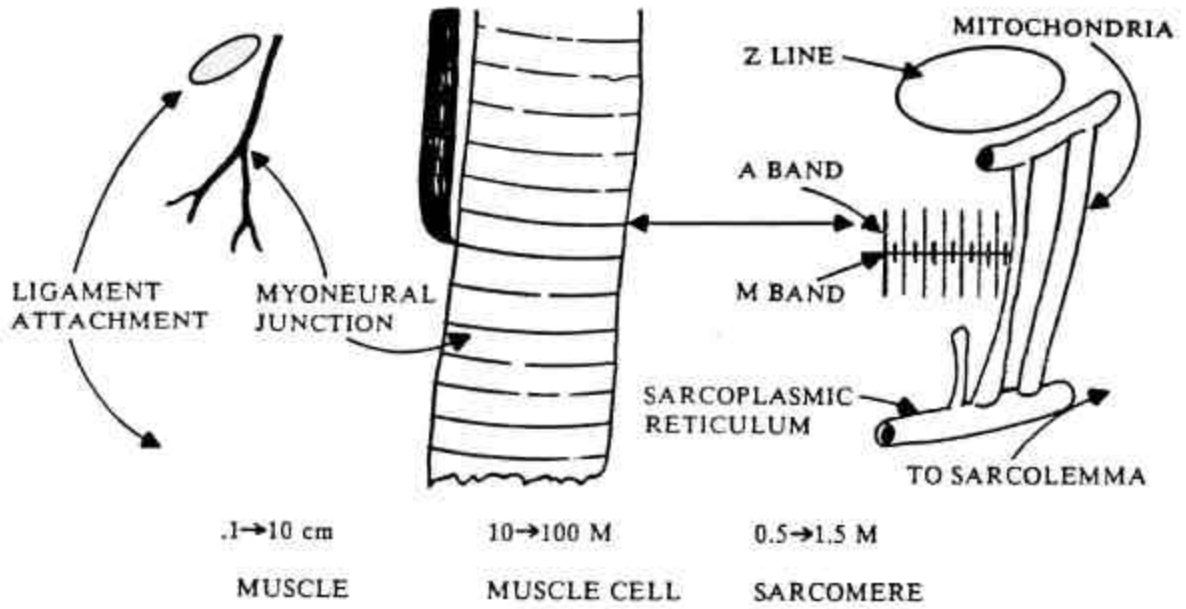
Thus the nervous system, having this quantic retroversion, is a good example of an organ system displaying emergent quantic behaviors. This allows for the dynamic connection of the parts of the organism to other parts. Thus our quantization of the molecular motion in the energetic flux and the shift of the photons can give rise to the emergent behaviors of higher integrative, and control organs within an organism.

This book offers a new description of neural processes, one in which deterministic and reductionistic theories are inadequate as a description of the full force of what is happening within an organism.

As science begins to develop more nonlinear, quantic rationales for understanding the complexity of life and biology, we will see that simple systems cannot be reduced to their most important variables. Systems work on the interplay of a large number of shifts. Stephens (1961), through a long series of experiments involving sensory perception, comes to the conclusion that many aspects of sensory and neural phenomena can best be explained through the existence of a neural quantum element. Such a small unit of activity is not to be identified with the all-or-none response of an axon, but is found to be integrative with the sensory system. A triphasic operation is needed for systems analysis.

Isaacs writes that quantization imparts stability to a process. "Quantization adds a permanence to the time and space phase relationship. The process can become rather specific in many ways, especially when considering frequency and phase space energetic inputs. There are

INDETERMINATION OF MUSCLE SARCOMERE



- 1 - PULSE TRAVELS DOWN AXON (IONIC PERMEABILITY TRANSFER)
- 2 - IMPULSE ACROSS MEMBRANE
- 3 - PULSE ACTIVATED IN SARCOLEMMA
- 4 - PULSE CARRIED BY ENDOPLASMIC RETICULAR ACTIVATION
- 5 - CONTRACTILE UNITS FIXED IF POTENTIAL RECEIVED
- 6 - CONTRACTION

constant incoming and outgoing impulses of the nervous system, which under a rather complex quantic control can be executed wisely by the system." An over-reduced machine of simplistic on/off type behavior would not be able to handle the different modalities needed for reproduction and metabolism. Thus in the development of all of our computers, we have not been able to find one that can copy the factors of life (metabolism and reproduction), because our computers are built on the dictate of mechanical, determinate, reductionistic processes. Computers work on binary systems. A condition is off or on. Under quantization a circuit could be off, on, or both, indeterminately.

**RECIPE FOR EVALUATING A MECHANISTIC MODEL
WITH UNCERTAINTY RELATIONS**

- Step I. Decide the imprecision (uncertainty) of a variable from the model.
- Step II. From uncertainty relation, obtain the minimum uncertainty of the variable conjoined to the variable chosen in Step I.
- Step III. Compare this calculated minimum uncertainty (Step II) with the maximum uncertainty (Step I).

MUSCLE SARCOMERE UNCERTAINTY

CHOOSE MAXIMUM UNCERTAINTY

- I. Gain in velocity of a C_A ion (excitor of muscle) is

$$\frac{0.5 \times 10^{-4} \text{ cm}}{0.016 \text{ sec.}} = 3.1 \times 10^{-3} \text{ cm/sec.}$$

$$\text{Momentum of calcium ion } \frac{40}{6.02 \times 10^{23}} \times 3.1 \times 10^{-3} = 20.7 \times 10^{-26} \text{ erg}$$

II. Choose conjugate. [Position (distance)] is the conjugate of

III. Compare.) position $\sim h/\lambda$ momentum

$$\sim = \frac{6.6 \times 10^{-27} \text{ erg}}{2.07 \times 10^{-25} \text{ erg}} \sim = 3 \times 10^{-2} \text{ cm}$$

**This is far beyond the desired range for locating the ion in the sarcomere.
This process is under the indeterminacy principle, and thus below the correspondence rule.**

COMPUTER BINARY SYSTEM

TRINARY SYSTEM

0 - 1

0 - 1 - Indeterminate

In biology, factor 3 is influenced by the indeterminate life force-affecting principle.

Transformations describing synaptic function will embody two extremes of a continuum of the neural net function. Quantized emergent behavior will lead to the more permanent establishment of preferred neural circuits. The circuits will have a high degree of spatial and temporal specificity in their response to the environment.

Isaacs also writes that a set of neurons and their synaptic interconnections will contribute to the nervous state behavior, and will make it impossible to specify completely the exact circuit involved with a particular engram. The engram becomes dissociated from its parts of structure and pathways and becomes existent on the mechanical nature of its whole, thus leading to the idea of the holistic, or holographic, interpretation of thought. A review of Pribam's holographic idea of brain action would be helpful at this point.

BRAIN

Rational	Visual/Spatial
Logical	Intuitive
Analytical	Holographic

The overlap of spatial components of the neural circuits will point to the integrative and associative functions of higher nervous centers. The description of such modes of functioning and interconnections assume the integrative state-like character. These can be tentatively termed "micro states", on the basis that they are involved with a small number of elements and partial topological orientation in certain locales and that they are highly stable.

Thus the orientation of the parts implies the orientation of the whole, and the orientation of the whole imparts a feedback to the orientation of the parts. Thus a system can be analyzed from parts to whole or whole to parts. The only true analysis of any real meaning would be an analysis that embodies both.

Thus these micro-states function as in field theory; stable elements acting with the whole. This type of theory was put together by certain psychophysical phenomena, and is known as the *plasticity rule of psychophysical theory*. We learn gestalts that do not have precise localizations in neural phenomena. Gestalts can overlap on other gestalts, making rather complex, learned behaviors. Thus these psychophysiological phenomena aggregate in fields that overlap on other fields, which overlap on other fields; not in a mechanical binary process (such as in computers), but in a triphasic, indeterminate, quantic process.

As we have outlined, we can see that there is a localizability phenomenon within neurons of the brain, as well as a holographic, indeterminate whole of the process. Both parts of the process make up the whole, as Yin and Yang blend to make up the entire process.



Groups of associative micro-states, storage micro-states, and integrative micro-states will interact in concert and contribute to global states of behavior. Thus we encounter a phenomenon known in psychology as the *state theory*. In the sleeping state, waking state, awareness state, anxiety state, etc., there are various psychic sets of behavior, employing the associative, integrative, or storage micro-states. These become learned states, and thus behavioral theory becomes a profound way of understanding some of the guidelines with which the human being or any other organism operates. But since this learning theory or behavioral psychology has some degree of impreciseness, we can see that the indeterminacy principle applies even here. In other words, we cannot be exactly sure what will happen in an experimental situation; there is always a degree of unsureness, because of the indeterminacy built within the precept.

At the turn of the century Thorndyke outlined two theories of learning; one, the *law of effect*, and two, the *law of readiness*. The law of effect was thought to be an associative to classical conditioning, much like Pavlov's dogs, where autonomic neural functioning could be shaped by behavioral training. The law of readiness occupied more of a psychic state, in which a conscious organism such as a human being would be able to attain an internal environment necessary to learn. Thus an alcoholic needs to first come to the realization that he has a problem, and get to the law of readiness; that quantum level where help might ensue. Many patients we see have similar problems, where they have to get to a place in the law of readiness to finally get to the point where they can accept behavioral change.

In the law of effect, in terms of quantization, the amount of conditioning that can be affected on an organism has to do with how an organism interprets its amount of negative or positive reinforcement. The health of the organism has to be at least of a base rate in order for the organism to receive and unconsciously interpret the reinforcement. Also the ratio of reinforcement is very important, as we will find sometimes that a non-fixed ratio gets the best type of reinforcements, such as the non-fixed reinforcements supplied in Las Vegas and gambling houses in other areas.

The law of effect, in quantum terms, is working on neurological organization, and must deal with global levels of achievement and minimal thresholds of conditioning; whereas the law of readiness is more of a conscious application. For the law of readiness to be utilized, the basic needs of the organism must be provided, that of shelter, food and clothing, before the person can go on to find other needs. Then a self-assurance must be achieved to a certain degree inside the organism, so the person has the self-assurance to make any type of change. Next, a perspective for change or growth must be supplied, either through fear of the present state, what might happen in the future, or attraction to the new dynamics of a healthy situation. Thus attraction and compulsion take place in our law of readiness, the perspective for changing growth. So Thorndyke's laws of effect and readiness can be utilized in developing a new biofeedback practice.

We can become more and more sure, but we understand that even an increase in the probability of production through technology presupposes that we are always faced with indeterminacy. Indeterminacy is based in the very foundations of the operation of the system, and thus will display itself at the final output of any behavior. In chemistry the states of various molecules were known by their transformations in empirical presentations long before quantum mechanical understanding of electrons was developed.

The original periodic table of elements designed by Russian engineers, the Mendeleev Periodic Table, was designed by observation of the phenomena of how certain possible elements might combine to make other compounds. Thus the periodic table was designed without the benefit of understanding the quantum theory or the valence interactions needed to truly make the mathematical understanding of why the periodic table works.

Thus a quantum table of psychic states can be proposed from observation.

Fear	Worry	Carelessness
Anger	Anxiety	Bashfulness
Joy	Sadness	Delusion

From the above table, we can propose several combination psychic states, just as one can make many different molecules from various atoms.

By looking at how oxygen reacts with water, the periodic table was designed on the understanding of all the other elements. Psychologists have observed many mental and psychological states, and developed a phenomenological consideration of these states, known as psychology. Without the benefit of a quantic mechanical process of understanding how these various mental states operate in a holographic field theory, psychologists have set up phenomenological observations that allow them to understand statistically some human phenomena. What we are adding is just an open door for an understanding of these various states. The states of integrative, associate, memory, storage, retrieval, and others offer us a quantic understanding that will account for the neurological process of psychology. Built into our system will be the indeterminacy principle; understanding that we never can absolutely know any situation; we can only make a good guess.

We will see that even abnormal mental states, such as psychosis and depression, will also be made up of these fields and overlaps. We would like to point out that the full range of human phenomena is inherent in every system.

← Anger, Fear, Joy, Sadness, Worry, etc. →

We know from psychiatric cases that everybody is a little schizoid; everybody has many personalities within. These are symbolic of the different types of psychic states that can be occupied by the overlap of these phenomena.

In psychology we talk about the state theory. When a person is in a certain mental state, he will remember what he learned in that state when he returns to it. Thus in the state of drunkenness, when a person is inebriated and learns a telephone number of somebody at the bar, he is less likely to remember it, until the next time he returns to that inebriated state, and then he is more likely to remember it. Thus we try to advise students to take a test under the same type of mental states and conditions in which they are going to study. If they study with coffee at three in the morning, the best thing to do to take the test would be to do it at three in the morning, under the influence of coffee. Since this is usually not the time tests are given, it usually is not the best time to study for a test. The best time to study for a test is in daylight hours, similar to the time you would take the test. Try to duplicate the state as much as possible.

Thus the state theory of psychology will allow us to understand that each of these very complex states interferes and interacts with others, and causes normal or abnormal behavior. Even the definition of normal or abnormal behavior is a very sociological one, in which different types of morays and social judgment cases influence what is normal or abnormal in certain situations. Attempts to reduce the field of psychology to simple phenomena, such as just behavioral, just Jungian, just analysis; or even attempts to classify an abnormal vs. a normal state, really do not fall under the type of psychology or biology we are trying to describe in this book. A much more loose, nonlinear form of thought would dictate a different type of psychology than what is practiced today.

People who go into psychological careers and take courses at college level are taught statistical, phenomenological observations of groups of behavior. They are taught certain counseling techniques. The entrance into and exit from such programs are evaluated on a truly analytical, intellectual basis.

People with high degrees of compassion, empathy, sympathy, love, sharing and trust are usually discouraged from joining such communities and finishing such degree programs. The over-analytical intellectualization of the person's condition dictates and dominates the field of psychology and medicine today. This type of analysis and intellectualizing separates the practitioner and the patient from the flow. Problems are maneuvered for solution within intellectual and analytical guidelines. Love, acceptance and sharing are replaced by guilt, anguish, and rejection.

Functional decisions and phenomenological observations should not be dropped from psychology, but they also should not be the hallmark or the primary decision-making process. Levels of compassion, trust, sharing and love should be dominant; whereas more functional moray decisions would fit better under sub-phenomena or sub-systems of treating our patients. In our priority of how we judge the interaction of a psychological problem, a more compassionate set of priorities must be developed.

America houses more criminals in jails than any other country on Earth. In the 1980s rehabilitation was deemed impossible. Our social and psychological systems are abhorrently unsuccessful. We must develop primary education and parenting skills rather than our tertiary crisis intervention system. Manic depression, anxiety, and other types of inappropriate mental states will be dealt with in a much different way; by looking at some of the bifurcation points that might have stimulated an inappropriate behavior pattern.

Finding a whole pattern of nutrition, disease analysis, causative factors and etiology, homeopathics, acupuncture and other types of theories will be the foreground of the new psychology. Doping up patients to cover up symptoms is just society's way of trying to reduce the negative situation at the sacrifice of the health of the patient.

An example of an integrative state behavior is that of a conflict in the fight/flight excitations of the autonomic nervous system. At this bifurcation point the stimulus is conducive to flee, or to fight and stand one's ground. This decision often comes as a surprise to the person involved, where he does not think that he would have run but did, or did not think that he would have fought but did. So sometimes this bifurcation point comes up to a crux in which an indeterminate decision based on some old pattern, or perhaps just some indeterminate molecule, might throw the threshold in one direction or the other.

The total causality cannot be assigned because of the conjugate of variables of the molecular motion in the neurons and neuron connections. Thus in the emotions and their link to behavior, a complementarity or indeterminacy link is processed through the nerves, leaving us with a good probability of observation in behavior, but an inability to absolutely know if, when or how a person will flee or fight.

In our development of holistic psychological interventions we can see that this is not just a possibility of a theory; this is an actual, viable, realistic, *existing* theory of psychological intervention. In this document we have not spent a great deal of time developing the psychological practices; we have just pointed to the need.

NEEDS FOR PSYCHOLOGICAL BALANCING

- | | |
|--|---------------------------|
| 1. Metabolic | 6. Parasite Control |
| 2. Bowel Flora | 7. Heredity Control |
| 3. Relaxation | 8. Inflammation Control |
| 4. Reconditioning | 9. Allergy Control |
| 5. B Vitamin Intake Balance
(not over-sufficient or
deficient) | 10. Homeopathic Treatment |
| | 11. Hormonal Balance |

Once again, this author would like to take the opportunity to show the reader that although these quantic ideas are not mainstream in modern medicine, they are still being used today.

The principles of electroacupuncture, homeopathy, quantic psychology, compassionate counseling, chiropractic, massage, and others exist as legal forms of medical treatment today, in America and throughout the world. In fact, they dominate worldwide. It is only here in America where more intellectual, analytical, reductionistic thinking dominates the mainstream. Let me guarantee that these theories are not mere theories; they are actually practical and dynamic medical techniques employed today.

There are millions today who practice energetic concepts of medicine. This book provides a plausible explanation for this phenomenon, scientific proof of the philosophy, and an introduction into the practice of a new bio-quantum medicine.

Life in America is built on the precept of freedom of choice. However, there are those who choose to interfere with freedom of choice in medicine, control the philosophy and technique of American medicine and prohibit freedom of thought. Thomas Jefferson said, with such impunity that it is carved inside his memorial, "I swear on the altar to fight against any tyranny over the minds of men." Some have taken a similar stance against the medical tyrants of chemical philosophy. It is to these courageous few that this book is written. I pray that the egocentric tyrants will have a change of heart, and thus make available the freedom of choice in medicine for the American public.

SUMMARY

1. **NEURAL ACTIVITY IS AN ORGANISM'S EXTENSION OF QUANTIC INFORMATION HANDLING USED AT THE CELLULAR LEVEL.**
2. **THE SYNAPTIC CLEFT IS A QUANTIC DEVICE WITH INDETERMINACY A KEY FACTOR IN ITS UTILIZATION.**
3. **THE NEURAL NET OF THE BODY USES QUANTUM INTERACTION RULES TO GENERATE A HOLISTIC OR HOLOGRAPHIC REACTIVITY.**
4. **PSYCHOLOGY AND PSYCHIATRY HAVE UTILIZED SO MANY INAPPROPRIATE DRUG-RELATED THERAPIES THAT THERE ARE VAST AMOUNTS OF IATROGENIC, INCURABLE DISEASES.**
5. **NATUROPATHY AND BEHAVIORAL MEDICINE ARE ESSENTIAL TOOLS FOR THE FUTURE OF NEURAL MEDICINE.**
6. **HOMEOPATHY IS AN EXCELLENT CHOICE FOR NEUROLOGY, AND PSYCHOLOGY AS WELL.**