

Embryonic Holography

by Richard A. Miller and Burt Webb

Embryonic Holography is part two of a two-part article dealing with biological holography, subtle energy systems of the body and the "psychedelic" or mind-manifesting aspects of DNA. Part one of this study was published in *PM&E* vol. 5 and focused on the chemoelectrical and biomagnetic aspects of how parts of the body set up holograms. This second part, originally written in 1973, deals with biogenesis and neurological regeneration, and includes fascinating speculation on the origins of cancer, faith healing, psychic surgery and other more technical aspects of mind-body energetics. We are extremely proud to present this outstanding source and primary study by two of our country's premiere parapsychologists.

INTRODUCTION

Holography is the process of recording and recreating complex three-dimensional wave fronts in space. The holography with which we are most familiar deals mostly with the visible spectrum, so we tend to think of holography in terms of three-dimensional photography.

However, holography can be conceived in different realms of the spectrum. The whole process of lasers and laser abilities to create images in space in visible light radiation is closely connected to microwave research and a device called a "maser" which broadcasts coherent radiation of microwave frequencies. It should be possible in theory, with the proper kind of equipment, to capture and broadcast complex three-dimensional wave form structures in space across a whole broad band of the electromagnetic spectrum. We can call this "broad band holography." Henceforth in this paper, when we are dealing with the term "holography" we suggest that it means a whole range of processes for capturing wave forms at different frequencies on the spectrum.

Some of the interesting properties of holography have to do with its differences from photography. In photography, the light from an object is reflected onto a flat surface where it essentially discolors that surface; or rather, the shadow that it casts discolors that surface. If you cut a photograph in half, you have half of the original picture that you started with. Holography is quite different.

In a hologram, the pattern of light that is created by the object is recorded at each point of the film. Each grain contains the whole

image. Each image is slightly different, however, and all of the images are very vague and very fuzzy.

Detail in a photograph is not particularly connected to the size in the sense that a small piece of a photograph will have a lot of detail on a small area of the scene. A large photograph will have a lot of detail on all of the scene. In a hologram, each grain has some of the information about the whole scene. It has some detail about the *whole* scene. A large hologram has a lot of details about the whole scene. So something different happens when you cut a hologram in half: you get the original picture, but it is less clear because you have lost detail.

A lot of work has been done recently (for over 30 years) on the electromagnetic field phenomena that are associated with the biological processes. The idea is nothing new, of course. Faraday did some experimentation with animal electricity, and Galvani (with his Galvanic cells) did experiments with animals. It was quite understandable in the growth of science to accept life as being electronic.

However, within the last 50 years, our intense activity in the biological field and the breakthrough in molecular biology (DNA research, etc.) have tended to obscure some deeper questions as to our understanding the nature of life. We are reaching the end of the paradigm in which we can afford to ignore the electronic properties of the macrosystem and deal with chemistry as if it were taking place in a neutral system. This new field can be termed "bioelectronic": a term based on biophysics.

Conventional biophysics seems to be centered around very minute detail of things, such as ion exchanges across cell membranes, etc. And very, very little contact is made with the idea that the electromagnetic systems may regulate the whole organism, the whole multicellular system, and not merely function at the level of cells. The regulation of the nervous system is appreciated to be primarily a biochemical phenomena in the sense that it is the exchange or profusion of calcium and potassium across a cell membrane. And so what you essentially have is a ripple effect that travels down the process of the cell, caused by an exchange of ions. Thus it is a chemical signal. And the synapse transmits, again, chemical, so that you have another chemical signal, and even though electromagnetics is appreciated in the nervous system, it is seen as an epiphenomena. In other words, not really appreciated as being integral or central to the regulation of the system. However, the theories of regulation of the system are very poor. And they do no justice to the complexity and subtlety of a living process.

Some of the specific electronic characteristics in the cell could pertain to the presence or absence of various chemicals that either accept or donate electrons. Electron donation or electron acceptance are connected to the older ideas of acids and bases, of chemical processes called oxidation and reduction. One must then approach a biological solution, or interior body fluids, on the basis of the electrolytes in solution: The different ionized and charged particles. Both kinds exist. And this is only the beginning.

We must deal with the fields that exist, the potentials and the polarities. And between the two of them the charged particles in the fields would then begin to generate the flows. Then we must deal with a process called electrophoresis, which is the movement of small particles by an electrostatic field. And we could also see the possibility of electrodynamic fields moving the particles in waves. What we have, essentially, is a solution of charged particles under a very complex control via a complicated electromagnetic field system that moves those solutions around. But in moving the solutions, the charged distributions inside the organism change and modify the fields. There is a very complex feedback between flows of particles and electromagnetic fields.

We have an incredibly complex situation compared to a motor in which a simple electromagnetic field system is cut by a simple metallic conductor. We have an organic system in which there are literally millions — billions — enormous numbers of fields being generated by enormous numbers of particles, being created, changed, switched around, etc. So we have a possible interaction between the structure of a physical system and the fluid flows within that system, with the heart being one of the most profound of those fluid flows. The heart could be seen as setting up a basic system of waves of movement that form the basis — the fundamental note — of the organic system.

There are many other interesting bioelectronic characteristics. One of the most fascinating is the fact that protein-formed structures in the cellular space are based upon the charged distribution across their surface; the charged distribution is related to the sequence of amino acids in their particular side-chains and determines tendencies to act. Amino acids have been characterized as being semiconductor in nature on the basis of one end being an electron acceptor and the other one being an electron donor. These link up into chains. And then they have little side-spines, and these side-spines also have their characteristics.

It is possible that charge movement takes place across the surface of a protein. A line of side-chains stick out of the surface of

protein molecules, forming a charge distribution system that acts almost like an electrical conductor. The electrons could hop along the spines sticking out from the side of the protein molecule and actually flow across the surface as if they were going in a conductor. We have the possibility of electron conduction across the surface of the protein.

We have any number of interesting prostheses, or special radicals in the sense of molecular substructures, that have a whole host of purposes. For instance, the hem- of hemoglobin is a very fascinating iron prosthesis. There is a figure of iron and other items arrayed in space; very small compared to the size of the globin molecule to which it is attached, but very effective for acting as a grappling hook for oxygen.

This is also under electronic control. We have the possibility of the rotation of the different parts of the molecule, if it breaks into several different sections in the sense that they are cohesive units, and those units are chained together. If those units change through a flow of electrons or through an input of a charge from the chemical space, then the shape could change. So charge flow and charge distribution on a protein molecule is critical to change in the shape.

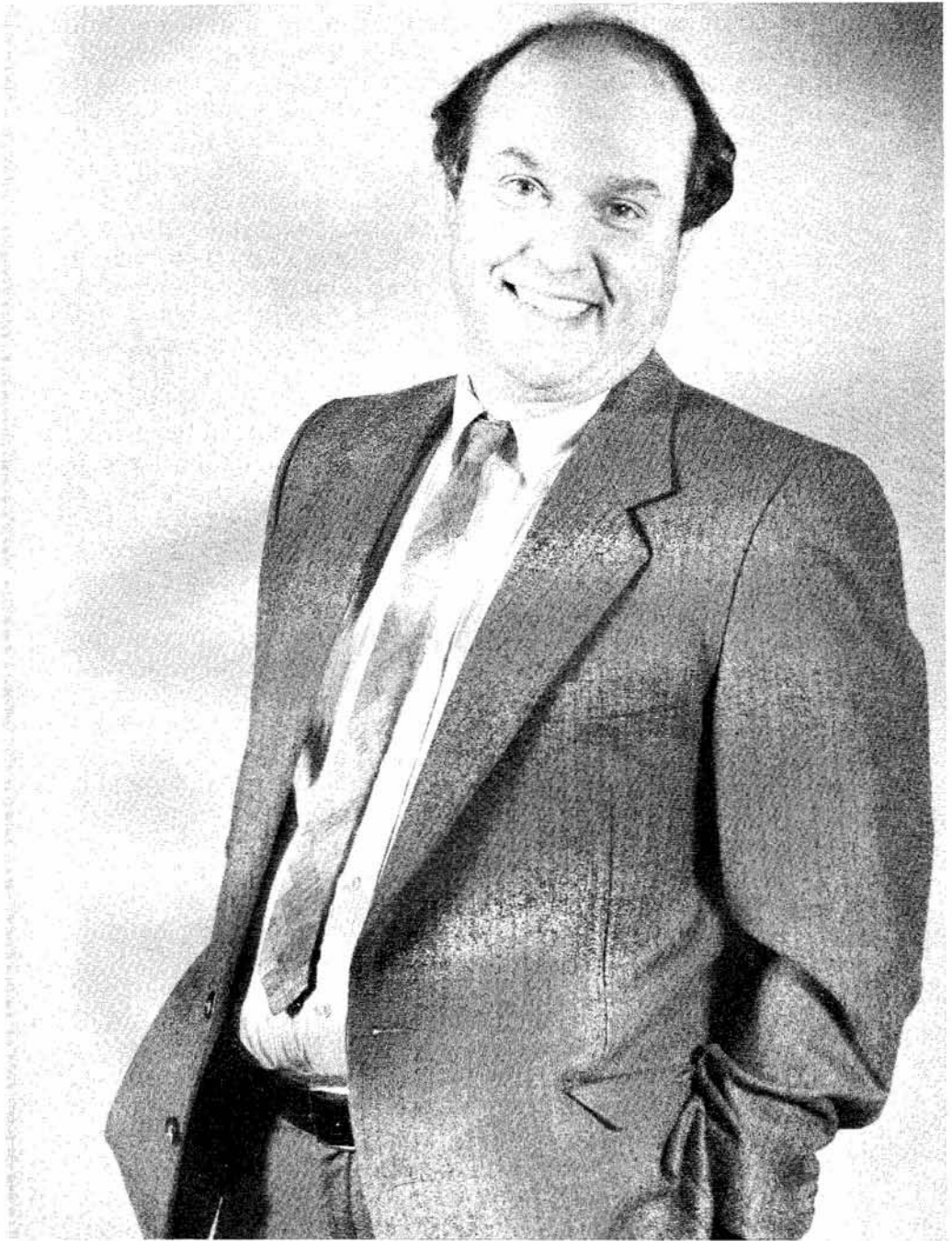
There is evidence of special tissue in the back of rats, in fatty pads, that can uncouple the oxidation energy instead of converting to ATP as is the usual process at the level of ribosomes. The special enzymes convert the oxidation energy directly into infrared radiation and radiate it out of their bodies. So it is conceivable that radiation of infrared takes place as a result of bioelectronic processes on protein.

Another possibility is that of visible light in the various creatures that are able to glow. This process is carried on by special enzymes. And again, we have the different processes that are electronically keyed and involve electronic radiation.

Microwaves have been detected in the regions of the brain and the heart of men and rabbits as indicated in recent research projects. We see that a living organic system is a very complex holographic entity. And by holographic it is meant that we have seen different things that are done at the molecular level through complex EM activity and then we have conceived of flows and fields at the organismic level. Let us speak of the creation of those fields, or rather, the coordination of those fields.

In the nuclei of each cell in the human body, the DNA (deoxyribo-nucleic acid) carries the structure of our whole body. Not just our physical form, but also the processes that that form undergoes in terms of survival. If all of these things are in truth locked in the

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Author and physicist Richard Alan Miller

DNA, how does that turn into a functioning being?

The DNA could possibly be the holographic projectors. The DNA could be projecting a field that would be experienced by other DNA in the body. The DNA, in a sense, could be linked together. The DNA are also linked to their own cells that they are controlling via mechanisms of RNA transfer and enzymatic action in the cell. We believe that it is likely that the DNA and the RNA are in communication. Recent research has shown the possibility that DNA activates the motion of an RNA sphincter or iris mechanism to permit or exclude ion entrance into the cell. If this is, in fact, true, — and if the DNA controls the action of the RNA that goes to the ribosomes and other sites to create specific enzymes in the cell which causes further reaction, it is possible that the enzymes are under the control of the DNA also.

We believe that the DNA is the projector of the biohologram, both at the cellular level and at the whole-organismic level. This means that the DNA creates a situation of a complex pattern of three-dimensional electromagnetic standing and moving wave fronts in the space that the organism occupies. We believe that these wave fronts interact with, interpenetrate with, and inter-determine the physical substance that makes up the creature.

The biohologram has characteristic properties of affecting the DNA that occupies its specific position within the biohologram. We believe that the nervous system constitutes a coordination mechanism that integrates DNA projections of the rest of the cells in the system. We believe it is first and foremost a coordination mechanism. And it aligns these cellular holograms and the linkage of the whole creature hologram. The DNA in a particular cell is not totally active. It has been determined that there may be as little as 1% of the DNA present in the nucleus of the cell acting as the determinant for the structure of that cell. The nervous system, interestingly enough, has the highest percentage of operating DNA of any cell system in the body, of up to at least 10% of the DNA in the brain cells. The neuron nuclei are most active.

We suggest that the nervous system projects a biohologram which interacts with the cellular bioholograms. If the membrane structure of the neuron nuclei are examined closely, it will be seen that the different cavity systems that enter the outer membrane, and also enter the inner membranes, will be seen to topologically be a single membrane. So the nucleus is lacking a membrane, or the neurons are lacking a membrane in the sense that two of their membranes are topologically one membrane.

We suggest that the neurons are not actually brain cells as such.

We believe that the brain is the cell, and the neurons are like a distributed nucleus for that cell. That makes the glial cells organelles in the giant brain-cell. But they are also cells in their own right, much more so than neurons are. We believe the glials are infinitely involved with the biohologram, in its projections and its coordination.

To go further, the biohologram, projected by the brain, creates standing and moving electromagnetic wave patterns at different frequencies of the spectrum in order to effect different biochemical transformations. There may be specific electro-static fields, or there may be electrodynamic fields varying at various frequencies all the way up the spectrum into visible light and beyond, from low radio waves.

Another process of holography is called "acoustical holography." Acoustical holography employs sound waves to create a movement on a surface that is used as the basis for creation of an optical hologram. So we essentially convert between a pattern of sound waves reflected off an object in space into a pattern of light waves that can reconstruct the shape of that object. We have a transformation between two levels of vibration, two media as it were, preserving a pattern in space. We suggest that this happens to a much greater degree in the DNA control of our bodies. The liver, for example, contains special function cells. The special function of the liver cells is created by the influence of the projection of the liver pattern on the DNA in the cells in the area where the liver is created. We are suggesting an important feedback mechanism between the activation of the DNA in a particular cellular tissue type that causes it to be that tissue type, and the biohologram being projected by the nervous system. This is bioholography.

CONCEPTION

Human sexuality is usually viewed as a physical-chemical complex; a more coherent viewpoint would see human sexuality in terms of electronics. We will not go into the detail of the electronic behavior of the nervous system of the human being during intercourse. But we will begin the story with ovulation.

Researchers have found that at the moment of ovulation there is a definite shift in the electrical fields of the body of the woman. The membrane in the follicle bursts and the egg passes down the fallopian tubes. As a side note, we feel that the phases of the moon quite probably influence the permeability of the membrane in the follicle, making it more likely that the egg will pass down the fallo-

pian tubes at certain periods of time. The sperm is negative with respect to the egg. When the sperm and the egg unite, the membrane around the egg becomes hyperpolarized. It is at this moment that the electromagnetic entity is formed.

The fertilized egg cell contains all information necessary to create a complete operational human being. And furthermore, the biohologram begins to function at conception, and only ceases to function at death.

So perhaps conception is the proper place to mark the beginning of the individual.

The zygote begins to divide as it travels down the fallopian tube. It is quite possible that it navigates its passage partially by sensing the biohologram of the mother. And this may actually assist in approaching and attaching to the wall of the uterus.

As soon as attachment to the wall of the uterus is complete, the zygote begins the process of establishing the linkage with the mother's circulatory system that will permit the passage of blood carrying important nutrients into the zygote. The womb is a special electronic environment in which an electrolytic solution provides an excellent framework for electromagnetic effects which are necessary in the development of the egg.

DEVELOPMENT

The developing zygote is spherical in shape at first. Then it flattens to become the embryonic disk. The disk differentiates into three layers: the inner layer (the endoderm) will become the viscera — digestion, blood, etc.; the middle layer (the mesoderm) will become the musculature; and the outer layer (the ectoderm), furthest away from the wall of the uterus, will become the nervous system and the skin.

Very early in development, one of the first appearances of discrete structure has to do with the formation of the neural tube. From a point in the center of the embryonic disk, a line defines itself out to the edge of the disk — a radial line. On both sides of this line, which is called the neural groove, the flesh puckers up and curves over to form a tube. This is called the neural tube. Both ends of the neural tube are open, originally. And we feel that it is possible field lines could pass through the tube. The tube is actually entrapping electro-magnetic lines of force. Eventually the tube closes on both ends, trapping the amniotic fluid in the cerebrospinal space. We are suggesting that cerebrospinal fluid is an analog of amniotic fluid

that the embryo develops in. We think that the nervous system, and most especially the brain, retains some embryonic properties all during the life of the organism in question. It is a safe assumption that the brain is, in a sense, the most infantile tissue in the body. As we mentioned before, the greatest part of the genome is active in the brain, and this agrees well with the idea that it is neoembryonic in a sense because originally all of the genome or the DNA in the nucleus of the embryonic cells is functional. It is only with development that most of the genome shuts down and specific cells begin to function, operating on only a fraction of their DNA potential.

With the formation of the neural tube, one end (the end that is in the center of the embryonic disk) begins to expand and enfold, twist, and develop itself into a system of complex tissues in complicated geometrical structures, which will become the structure of the brain of the creature. It is our contention that the brain is necessary and the nervous system is necessary for the development of the creature. It is one of the earliest formations and is prior to the generation of most of the structure of the body. Our contention is that the DNA at the center of each cell creates the multicellular creature hologram by influencing the DNA in the center of the cells. Initially, the problem of development centers around the flow of materials through space, and the establishment of material structure at discrete locations in space.

The study of cymatics has to do with the creation of structures due to the resonance of wave patterns. As an example, in two dimensions, if a drumhead is covered with fine sand and then is caused to vibrate by drawing a violin bow across the edge of the diaphragm or drumhead, the sand will arrange itself in geometrical patterns. It will flow into lines that mark nodal lines of zero motion that separate zones of the drumhead that are moving in different directions. The simplest would be a single line that would be a diameter of the drumhead, signifying that one half was pulsating differently than the other half. But the line between them is not moving. This is very important to an understanding of biological development.

We believe that the biohologram projected by the embryonic nervous system forms a three-dimensional pattern of resonant structures; including points, lines, and planes that electro-magnetically behave as the acoustic waves — the material waves -- of the drumhead. In other words, these electromagnetic points, lines and planes form locations of no movement. Essentially the matter that is flowing, the electrolytic solutions that are flowing, that have been drawn from the blood of the mother, are caused to move rhythmically

through the developing embryo. As they reach certain points, lines and planes, their motion stops. This is where structures are laid down and built up. This process is the key to embryonic holography.

The zygote acts like a three-dimensional nozzle. Electrolytes from the bloodstream of the mother flow through this nozzle and into the cymatic structure of standing wave patterns distributed through space inside the embryo and become fixed, solidified structures. This accounts for the different zones and the separation of the zones of the different kinds of tissue groups.

The picture is completed by the effects of the biohologram on the DNA of the cells that have formed along with the migration of the substances. You have an actual migration of cells, and a migration of substances throughout the embryo that take up locations dependent upon resonant structures of standing wave patterns. The cells, having arrived at their proper location and beginning to involve themselves with the materials and the fluids that are flowing in the three-dimensional nozzle are then specified in their particular tissue nature by the biohologram being projected by the nervous system. They are refined and developed as their genome is shut down until only the DNA that operates in a particular cell is just that DNA which defines the structure and operation of that particular kind of tissue group. So, through a complex interaction of three-dimensional electro-magnetic fields, rapidly dividing cells and a flow of electrolytes that is directed by the field but also feeds back on the field and influences it, a multicellular creature achieves the proper structure that will permit it to exist apart from the specialized environment of the womb.

This brings us to the close of the embryological development. When the proper point is reached at which a potentially self-sustaining entity has been created, then the conditions begin to change, leading to the expulsion of the new self-sufficient entity from the womb of the mother. We are now ready to enter another section that concerns itself with the postnatal stabilization of the new entity.

POSTNATAL DEVELOPMENT

Birth occurs. The fetus is expelled from the electromagnetic environment of the womb, and enters a world of separate gases, liquids, and solids. The biohologram which led to the development and stabilization of the entity now takes on its important control

behavior that is necessary to keep the organism alive and well throughout its whole life. The biohologram changes its action with the change in media. Its responsibility is no longer the actual development of structures, but rather the regulation of processes within those structures. Very little has been said about the potential interaction of the biohologram of the mother and the developing baby. We do not know very much, except that the possibility exists. However, at the moment of birth that intimate interlocking of holograms ceases to exist.

Now the entity enters the world in which it is alone, in a sense that only under certain conditions can it interact bioholographically with other creatures. Evidence has been found that certain kinds of salamanders have a complex system of electro-magnetic sensing that is based on a string of spots along the side of the salamander. As long as this salamander is in salt water, which is an excellent electromagnetic conductor, this system of spots serves to detect three-dimensional electromagnetic field changes around the salamander, thereby alerting it to food, enemies, etc. But the salamander spends part of its time on dry land. When it comes out on dry land, its holographic detection system withers away and ceases to function because there is not a medium that will sustain the electromagnetic fields necessary. However, when the salamander reenters the water, the holographic detection system comes back into operation. We suggest that humans and other multicellular land creatures have such an external holographic detection system in the womb. But that just like the salamander that external system tends to atrophy in the atmosphere because it does not have sufficient media to sustain the necessary electromagnetic fields. However, there is still a very slight leakage of the biohologram beyond the skin of the entity.

We feel that this slight leakage is the basis of a great deal of paranormal phenomena and is definitely the origin of the concept of the aura.

Under certain circumstances and in certain individuals in abnormal states, the projected biofield becomes faintly visible. It is possible, as recent research has shown, that the human eye can detect other frequencies than the strictly visual frequencies of light, that the leaking biohologram may actually be on a different frequency than the visible spectrum. And our eyes are merely transducing it, or translating it, into the visible spectrum. So we feel that the aura is intimately connected to the biohologram that causes the body to continue to function properly. We will return later to some other interesting facets of the manipulation of the biohologram. For

the moment, we will simply say that dowsing might possibly be related to an external functioning of the bioholographic system of the organism. Experiments have shown that dowzers detect extremely minute changes in geomagnetism. And these minute changes are most probably connected to the presence of water underground. We are mostly water, and the structuring of water in our systems is very closely connected to the bioelectronic behavior of our systems. So it is conceivable that we have some sort of sympathetic resonance that can permit us to detect a very tiny minute magnetic field change that is associated with underground water.

Ionization of the air is extremely important to our health. Ionization of the air also would potentially permit the expansion of the bioholograms further beyond the skin, or the expansion of what is commonly called the aura. We find that areas of high ionization (such as mountaintops, seacoasts, areas around waterfalls, etc.) have been known since time immemorial as holy or magical places. This might be connected to the fact that the increased ionization in the atmosphere permits the expansion of the aura or biohologram to the extent that bioholograms of individuals can interact or to the extent that an individual can manipulate this biohologram to cause external effects that would be perceived by the ancient superstitious people as magic.

As long as the biohologram is functioning properly, as long as the nervous system is continuing to coordinate and project the complex three-dimensional fields that support the biological processes in the organism, the organism survives. When the biohologram ceases to function properly, the organism suffers. And when the principle action of the biohologram stops, the organism dies. If there is any scientific correlate to the concept of Soul, it is most probably this bioholographic pattern system. It is composed of the ultimate stuff of the universe, electromagnetic field energy, which does not die in the sense that creatures die, so it fulfills the attribute of the Soul of being immortal in that sense. However, the pattern does change with growth, with learning, with experience, and with age. So there is a development of the Soul or the electronic field entity. It is conceivable, although a great deal more research needs to be done, that the electromagnetic field entity might be capable of an independent existence which would form the basis for the concept of life after death. However, a free electromagnetic field entity without a biophysiological matrix might have a difficult time in interacting with creatures, such as ourselves, that are still utilizing the biophysiological matrix.

This might be the origin of stories of ghosts and so forth, in

which a disembodied biohologram attempting to communicate with a physical creature could only enter the nervous system of the creature and cause hallucinations of forms in space that upon examination disappear, or turn out to be merely hallucinations, having no scientifically verifiable existence.

REGENERATION

In reptiles, tissue regeneration of a profound nature is possible. Entire limbs can be replaced. The process goes something like this:

A leg is lost. The damaged cells on the stump revert back to a neoembryonic condition. They now undergo explosive growth. The growth slows as the crude size and shape of the leg reappears. Refinement continues. Details appear. Growth slows even further. And finally, a new leg exists.

Such regeneration is not possible in mammals. Several reasons suggest themselves, but we favor the concept that the greater detail and sophistication of the biological machinery in mammals is made possible by the greater sophistication of the bioholographic projection system, which we call the nervous system. It is the recreation of the nerve linkages that permit the very sophisticated fields to exist, that define our appendages, that is lacking. We can generate new tissue, but to regenerate nerve cells seems to be much more difficult. And without those nerve cells being present in the new limb, the final sophisticated stages of coordination are not possible.

Many theorists are now tending toward the concept that cancerous tissue is tissue that has been damaged in some fashion and has reverted to a neoembryonic condition. However, because the necessary coordination control is not possible for regeneration to proceed, the cancerous tissue is stuck in the earliest stages of regeneration and merely continues to divide and expand without any control whatsoever. We also believe that this behavior is electromagnetic in the sense that the cancerous tissue has changed its electromagnetic properties to such a great degree that the physical biohologram is no longer capable of controlling the tissue. Therefore, it is in a runaway condition.

If this is actually true, that cancerous tissue is runaway neoembryonic tissue cause by a partially functioning regeneration system, then if we can understand the process better, not only could we control cancer, but even more important and profound, we may be able to unlock the key of complex mammalian regeneration processes. So that some day it may be possible to regenerate an entire limb that has been lost from a mammal, up to and including human

beings.

Becker, in a series of experiments, has shown that bone regeneration can be tripled in speed by the proper application of electromagnetic fields from the outside with no implants necessary. This proves that EM fields have a profound role in the generation and coordination of biological structures.

As mentioned earlier, we feel that the biohologram is closely connected by paranormal phenomena. It is quite possible that psychic healers who "lay on hands" are, in essence, exporting the power of their own bioholograms and asserting the control of that biohologram over the sick, weak biohologram that has permitted the disease condition to occur in the patient. Just in the way that two oscillators that are connected will tend toward the frequency of the more powerful oscillator, if two biohologram systems are connected, the more powerful biohologram may entrain the weaker biohologram and restore it to its proper coordination function.

It is possible that psychic surgery occurs via a process of the location of the diseased tissue through EM sensing inasmuch as diseased tissue has different electromagnetic properties than healthy tissue. An invasion of the body of the patient by the hand of the psychic surgeon occurs through manipulation of electro-magnetic fields that actually cause the skin to part and help to locate the diseased tissue and then cause the skin to reclose. It has been shown in experiments that blood will not clot if the polarity on the outside of the blood vessel is reversed from its natural, undamaged condition. In other words, when a blood vessel is damaged, its polarity changes. If we can prevent that polarity change, we can prevent blood from clotting. This may even explain the mastery of bloodless, tool-less psychic surgery in which a surgeon with his bare hands can enter a human body and withdraw without leaving a cut. It is more an actual inter-action between bioholograms than an actual interaction between physical substances. The physical substances are moved aside and then rejoined by the operation of the biohologram, thereby preventing the loss of blood or the appearance of a scar.

In closing, we should like to state that the earth, the sun, and the galaxy are all very complex electromagnetic entities; and that we feel that from the earliest existence of a bioholographic entity in the womb, the sun, earth, moon, other planets, and even stars beyond the solar system influence and to some extent direct the development of the entity. This is a very concrete electro-magnetic connection that could serve as a scientific basis for explaining astrology.

Not only do these conditions influence prenatal development,

but they are also present postnatally and continue to influence the organism in a variety of interesting ways. Evidence has come to light that the brain can intercept various frequencies of radiation from astronomical and terrestrial phenomena. If this is so, then it provide a very real scientific basis for the statement of the mystics that we are all inextricably woven into the fabric of the universe; we are not separate, distinct physical entities, but we are rather partial interacting electromagnetic entities that partake of the rich electromagnetic life of the universe. We will cover these concepts and the other concepts of paranormal-normal phenomena at a later date in other papers.

Holographic modeling is the next great revolution that awaits biology.

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