

THE FINAL EMPIRE

Volume 2

The Seed of the Future

Part 1

CREATING A WHOLE LIFE

CHAPTER 13

THE PRINCIPLES OF LIFE

The Moral Basis of the Life of the Earth

We live at a time of dissolution of human social bodies as well as the unraveling of the life force of our planet. This gives us all a sense of confusion and contradiction within existing social realities. Our response must be to turn to the enduring cosmic patterns of life, toward the healing of life. Because of the depth of the crisis our response must be equally fundamental. We are proposing to create no less than a completely new human culture that relates to the earth in a completely different way. We seek power, the power to endure. We are coming out of a position of weakness in which the power to kill and coerce was seen as the road to utopia. Now that the weakness of that conception is displayed in the planetary suicide of this final cycle of empire, those who choose to respond in a positive way need gather the seeds of Natural cultures and the truly beneficial things created by civilization and carry them through the apocalypse.

Our effort is to regain personal, social, ecological and cosmic balance. We propose to do this by adopting the natural pattern of life on this planet as our guide. The natural world is a world of shared energies. The life giving sunlight is captured by the green plants for transformation into living vegetation. The life energies circulate, transform and continue to circulate through the web of life. With this circulation, a slow build-up of the soil occurs to provide for the planet's further ability to support green plants that can capture more energy, driving the system to its climax of biological succession, its dynamic balance within the life of the planet. Just as the balance of energies within the human organism is consciously maintained among a vast array of different substances and nutrients, dynamic balance is maintained in the planetary organism by multi-billions of constantly interacting life processes. Just as the intellect

alone could never guide and administer the functions of the human body, there is no way that human intellect could make decisions about the life of the earth that would be superior to the cosmic intelligence that has created and maintained it.

The life of the planet is able to cover the earth in its extremes of temperature, pressure and moisture variation through its creativity. The creativity and adaptability of planetary life combines with the thrust toward diversity of form and function that allows life to express its intelligence on all parts of the planet's surface. The hallmark of the whole life is diversity within unity. The planetary life functions with the paradox of unities within unities such that each life form is a unity unto itself but yet is a part of a greater whole.

The unities of the planetary life as well as innumerable and constantly acting life processes all maintain relationship with each other. Everything is connected and any adjustment of one effects others so that they adjust simultaneously to the new conditions of their existence. Creativity, balance, adaptability, shared energies, unity-diversity, transformation and relationship are modes of behavior that we find fundamental to life. These behaviors of living things occur within a context of consciousness. Each life form is a conscious entity. Consciousness is the glue that holds the form together and animates it. When consciousness departs in death, the form disintegrates.

These seven principles and their subsidiary effects are drawn from observation of the behavior of the web of living things. This is the behavior of life on earth. This is its moral pattern. From this we may draw moral principles for the behavior of human society. *When we create human culture that is patterned on these principles and integrated with the web of life then human thought and action will be consonant with the purpose of life on this planet. Humans will re-present the life of the earth at the level of human activity.* Life does have a moral basis and the moral obligations are clear. If we are to create a sustainable society, we must follow Natural Law. With the crisis and dissolution of empire we see the sanctions of the law. In creating new culture we must be aware of the need to conform to the law so that our kind and others may endure. Following our path back to the source we see that the elements of our new culture need contain balance, self-regulation (responsibility to self and others), an expanded view as to the functioning of the wholes, a foundation in cooperation and an institutionalized creativity. If our social pattern is grounded in the paradigm of life then our actions expressed from that base will be resonant with cosmic patterns.

Balance is the Foundation of Life

In a social sense maturity is seen as self-regulation, that point at which we are not dependent upon parents or others to conduct our affairs. In the organic world beings also exhibit self-regulation. It is the self-regulation of each species that gives the ecosystem its balance. Because each being lives according to its nature, the whole functions in resonance. The balance of the human population in a forager/hunter band is self-regulating. This ecological maturity is fundamental. The cosmos exists in balance; the life of the earth exists in balance. Within this we see by contrast that the theorists of empire culture invented ideologies of linear increase, ideologies of imbalance. When the new edition of the myth of linear increase was being formulated

in Darwin's time, the rationalist philosophers searched for a motivating dynamic in the natural world. They looked for a cause of change, which they could hold up as the force for linear increase. Darwin and Malthus found the motor in population increase. For Darwin, the balance of species is maintained mechanically by predators and starvation. As this flood of population continues it is the "survival of the fittest" that culls out the weak and selects the strong, whose descendants then become the new "evolutionary waves." Imbedded in this perspective is a total irresponsibility, a complete immaturity. No being is responsible to the whole. Each being is only obligated to fight others for its own survival. This pattern is in fact reflected in the culture in which we live. This is why we face planetary suicide. No one is responsible for the life of the earth. One simply struggles for the "individualist" power and wealth held out by the culture.

This scheme fit in with the theories of "free markets" propounded by Adam Smith in his tome, *An Inquiry into the Nature and Causes of the Wealth of Nations* (1776). In Smith's theory, all people were completely rational. With many sellers and buyers in a free market, they would choose the best product at the least cost, thus constantly moving efficiency and social benefit forward as the inefficient died off. In this scheme, no one is responsible, "the natural order," "the hidden hand of the market," brings the "good things" to society.

No society was ever configured this way. Powerful social forces, cartels and monopolies set prices and control supply, but Smith was creating a myth not describing reality. This is similar to Darwin's myth of the population motor. The claim is made that it is not human directed, that it fits the pattern of the cosmos.

As this mythos expanded, "Social Darwinism" then became welded onto it. In the myth of Social Darwinism, human societies such as the imperial society of Britain rise to the top and humans within societies rise to the top because of their evolutionary superiority. Obviously there is no "top" to rise to in a cooperative forager/hunter band but in an imperial culture based in hierarchy this can seem to be "just common sense." We see the financial aristocracy born with the best medical care, fed with the best diets, tutored with the finest master teachers and finished at the best schools. Given the widest experiences of travel, entertainment, and sport because of inherited wealth and the mental reinforcement since birth that they are destined to rule, we can understand how they would readily adopt a social darwinist perspective. They could easily be persuaded that their kind was superior, while they stand on the necks of those who never had their advantages. In fact their class actively prevents others from having those advantages.

The linear thinker Hegel with his "dialectics" also thought he had discovered some kind of "natural" law. The "dialectic" is simply the clash of two opposing forces that result in a synthesis. As interpreted by Karl Marx in *Das Kapital*, the "dialectic" was focused on social changes in the imperial tumor body. The force of the class of industrial workers contradicts the force of the industrial ruling class. In Karl Marx's adoption of this theory, this would represent the thesis and antithesis. This contradiction of the ruling class and the working class is resolved in the synthesis, which in Marx's view would be the dictatorship of the industrial proletariat. In Hegel's linear dialectic, the synthesis becomes the new thesis and then a new antithesis arises. This is resolved into a new synthesis in order to keep the train of linear events going.

This culture bound theory looks good when applied to human social change within an industrial empire because the culture is based in competition/conflict, but this is an artificially created situation. If one tried to apply these linear theories to the natural life of the earth, they would not correspond to reality. The body of capitalist myth has allowed individuals in empire culture to believe that they have no moral responsibility, because, in their conditioned way of thinking, it is "natural" and "just common sense" that there be the rich and the starving, as that is how evolution progresses. Ignoring the dynasties of inherited capitalistic wealth and the power of an entrenched elite, people will say that it is natural for some to have more than others. Just as it is natural for the more highly evolved industrial societies to control and aid those less able to "modernize."

The body of Marxist myth can only work if there is industrialization. In this theory of imbalance, one accepts the cult of science and the poisonous and destructive process of industrialization as the path to utopia. Like the capitalist variety industrialist, the radiation poisoning and ecological degradation of Marxist lands is seen only as a "management" problem.

By focusing on the matter of balance in the cosmos and on earth we see that some of the basic assumptions by which all of us in empire culture are conditioned, are at great variance from cosmic patterns. The matter of population balance is fundamental to our understanding.

Robert Augros and George Stanciu in their important new book, *The New Biology*, survey recent biological studies that describe the self-regulation of populations. They show that elephants, for example, regulate their populations according to food supply and living conditions by raising or lowering the age of puberty and by shortening or lengthening the duration of the period of sexual fertility of females. Augros and Stanciu say that, "Evidence from other field studies indicate that the birth rate or the age of first reproduction depends on population density in many large mammals, including white-tailed deer, elk, bison, moose, bighorn sheep, Dall's sheep, ibex, wildebeest, Himalayan tahr, hippopotamus, lion, grizzly bear, dugong, harp seals, southern elephant seal, spotted porpoise, striped dolphin, blue whale, and sperm whale."¹

There are many different ways in which species regulate their populations. One interesting study showed that all of the birds of the same species, in the same region, could vary the number of eggs in the nest in any one season according to food availability and species population density. In a certain year of low food supply all of the birds' nests would have three rather than the usual four eggs. Augros and Stanciu quote biologist V.C. Wynne-Edwards who says:

"Setting all preconceptions aside, however, and returning to a detached assessment of the facts revealed by modern observation and experiment, it becomes almost immediately evident that a very large part of the regulation of numbers depends not on Darwin's hostile forces but on the initiative taken by the animals themselves; that is to say, to an important extent it is an intrinsic phenomenon."²

In the popular mind the image of ecological balance is the wolf pack and moose herd. This image does represent the balance of the food chain but eliminates the cooperative and holistic elements of ecological functioning. While the wolf, cougar and eagle are dramatic and fit the imperial image of power and violence; these predators are only a handful while there are millions of other species from micro-organisms to redwood trees, whose populations are not impacted significantly by photogenic predators.

Life is wise, mature and self-regulating. The myth of the "red in tooth and claw" has distorted our understanding of nature, but by a review of recent biology we are able to adjust our images to the way nature really works and the way a creative and stable human culture could fit into it. In the contrasts that we have been examining we see that there is a profound shift of image from mindless organisms driven to maximize their numbers, to responsible, intelligent self-regulating living beings.

These are not academic biological questions; they are political questions of the theology of empire. They control the definition of what life is, and define appropriate behavior for humans.

Reductionism is the prevalent method of science. The "Newtonians" who dominate the sciences except for the new "Quantum" school of physics, say that the universe is like a giant clock built of "dead" matter. We take apart the pieces and examine them down to their quarks and discover what makes the world tick. This is the dominant scientific view and the "conventional wisdom" of empire culture. But the rare scientists such as Augros and Stanciu propose a holistic view in which the cosmos and each of its components relate as whole but interrelated bodies.

The Cycles of Life

Balance and cycle are the basic processes of the cosmos. Events are circular, cyclical and vibrational- from one pole and back around to the other. We are born to cycle and motion. From the time that the reproductive cells are formed in each of our parents, we are in motion. When a sperm makes its journey to our egg, we are in motion. When we are later carried in the womb, we are in an amniotic sea of motion. After the cycle of gestation, we are finally born out of the body into a world of motion where winds blow, seasons cycle, and cycles of our own growth occur.

Each of us has been born onto a sphere travelling in space, called the Earth, which is spinning around the central sun. The central sun with its planetary companions travel in a circle within our galaxy which itself is moving around a supercluster of galaxies. From the moment our first cell is created, we are part of the whole, and we never cease being in motion. We are a process, part of increasingly larger processes. There is no such thing as linear expansion toward some static impregnable security. The motion we experience is not random, but is cyclic. The circles of the Milky Way Galaxy, the solar system, our earth and the moon around us, occur in cycles so finely balanced and timed that they may be computed exactly, far into the future or into the past.

These invariable motions are the Law. These impeccably tuned; harmonious cycles are imposed upon us by forces so powerful that there is no question that they are Cosmic Law, Natural Law. Within these celestial cycles the planet spins in a constant

cycle of sunlight/darkness that is functionally a day/night alternating current. Each point on the planet's sphere is saturated with energy, then shadowed from it in precisely timed measures. Within the diurnal/nocturnal cycle and the energy cycle of the seasons, organic life on earth proliferates. The life of the earth was able to grow and develop because it remained in a state of dynamic balance.

There is certainly change in the earth's life but this occurs within a context of balance. The earth's poles do tilt which causes the seasons. If the earth tilted even a few more degrees or if there were any deviation of the earth's orbit around the sun, the life of the earth would be greatly altered or non-existent. The organic life of the Earth has developed its cycles within the womb of the solar system. The sun, the principal energy source, is itself a cyclically pulsating body which experiences periodic expansion and contraction. The sun revolves in a 27-30 day cycle, its heat output fluctuates in a 273-month cycle, sunspots occur in a 22.22-year cycle, and the magnetic poles of the sun reverse themselves every 22 years. The widely varying energy fields of the sun encompass the earth, as it vibrates within what might be called the solar energy body.

Could we visually perceive magnetic energy fields, we would see the teardrop shaped body of the earth and its magnetosphere speeding around the sun. Within this teardrop of the magnetosphere we would see a stronger doughnut-shaped magnetic energy field with depressions at the north and south poles. Further within this energy envelope are layers of tenuous matter called the atmospheric strata: exosphere, ionosphere, mesosphere, stratosphere, and troposphere. As with organic cell membranes, each of these layers is composed of different elements and performs particular functions for the inner body of the planet. The ozone layer and the other atmospheric membranes are barriers allowing certain energies to pass and preventing others from entering. The skin of all biological cells performs this same function.

The earth, the complex blue and white speckled egg, is alive, and its life processes vary constantly as it spins. Its colors change with the seasons; its cloud layers whirl and circulate in rhythmic cycles. Not surprisingly, an Italian chemist has discovered that the speed of the chemical reactions varies according to a number of planetary situations.

"More than 400,000 experiments, covering a ten-year period, by Professor Giorgio Piccardi, of Florence, Italy, show that the time required to complete various chemical reactions varies with the time of day, the time of year, the sunspot cycle, and whether or not the chemicals in his test tubes and flasks are protected from external electromagnetic forces by metallic shields."³

Uncountable numbers of organic events occur each second on earth, conditioned by celestial events within the body of the solar system. The sunspot cycle, the solar cycle, the moon cycle, the alternation of light and dark, all these events and more, trigger or impress themselves on organic events on the earth. Everything is in relationship; everything flows in cyclic adaptation according to its nature and place in the universe. Organic events such as the metabolism of plankton in the oceans, the migration of salmon, the growth of forests, the annual migration of caribou, the cycles of sexual reproduction and innumerable other events all are influenced by cyclic forces utterly enmeshed in a flowing whole so intricately balanced that a relatively

small eruption on the sun, a solar flare, can create multiple effects in the process of the life of the earth. Whether viewed from the energy metabolism of the solar system or from the vantage point of the various kinds of living molecules in the cell, life unfolds in a series of wholes, each fitting into and forming an integral aspect of a larger whole. The many parts whose functions combine to create the cell are also a part of an organ, which in turn is part of the whole body. That body may be part of a tribe, a school of fish, or a deer herd whose social body then fits into a larger food chain. *The pattern of the cosmos is form integrated within form and mind within mind.*

The various habitats across the surface of the planet create the whole body of the earth, which itself is involved with energy flows (metabolism) that are solar, galactic and cosmic. The mind of the cell exists within the mind of the organ, which exists within the mind of the body. *Form exists within form, mind within mind and life within life.*

Life Cooperates

Our subconscious conditioning leads us to believe in the ubiquity of violence. We see the culture of violence of the empire as natural. Nonetheless, there is no mindless, gratuitous violence in nature. There is eating. Predators eat prey and the prey violently resist but organisms don't go around attacking each other for no reason. There are territorial challenges and mating challenges but these seldom reach the stage of violence and death. Our conditioned belief in the violence in nature is so deep that the Hollywood film makers who create "nature" movies train animals to fight for the films. Wild stallions kill each other and bears attack each other in the movies because it adds drama and it lends an air of "authenticity" to the film. People expect it, so it is faked for the audience.

Darwin said, "All nature is at war, one organism with another, or with external nature."⁴ This struggle for survival follows his original assumptions of scarce resources and exploding populations. This assumption of the violence of life has been shared by many of the original Rationalist philosophers as well as the general conditioned population, most of who no doubt grew up in the artificial environments of cities and had little contact with natural reality.

Ecology is sometimes called the "subversive science" because it assumes interdependence in the living world. Ecology is the study of the inter-relationships of nature. As these cooperative inter-relationships became more apparent through study, the new science became more subversive to orthodoxy. It is now demonstrable that nature is a vast cooperative enterprise. There is no war. Each being functions according to its own nature and its nature fits its ecological niche. Organisms aren't out in nature battling over the same grass seed. Each feeds according to its own niche and these niches are highly refined. Ecologist Robert MacArthur did a study of five species of warblers, all about the same size, all occupying the same territory and all eating the same food- spruce bud worms. He discovered that their niches were so finely and cooperatively tuned that each species predominantly used a different portion of the tree for their feeding. That is, one species would go to the top portion of the tree; another would concentrate on the base of the tree, another one quarter of the way from the top and so forth. These finely tuned niches exist throughout nature.

Not only are organisms careful about their niches but they work cooperatively together in all sorts of symbiotic ways. Biologist David Kirk says, "It is doubtful whether there is an animal alive that does not have a symbiotic relationship with at least one other life form."⁵ This is also true in whole communities. The succession from primary to climax forest is an array of symbiotic relationships as guilds of species prepare the way for other guilds of species. Authors Augros and Stanciu cite the work of marine biologist Conrad Limbaugh, who has studied cleaner-client relationships. Involved in this startling activity, so far known, are forty-two species of fish, six shrimps, and Beebe's crab. In these cases one species takes parasites from the body of another for food. Limbaugh says, " 'I saw up to 300 fish cleaned at one station in the Bahamas during one six-hour daylight period.' The client fish approaches the station and poses, allowing the cleaner to forage within its gills and even to enter its mouth without danger. No one yet knows what prevents ordinarily voracious fish from eating the cleaners."⁶

The Consciousness of Life is Creative

The beauty and wealth of the life of the earth is its diversity. "...Two billion different kinds of organisms have at one time or other inhabited the earth."⁷ The creativity of life forms is such that some live at the bottom of the ocean and some in the coldest arctic regions. The diversity of forms and the diverse ways in which they cooperate together to form one unity demonstrates overwhelming, creative intelligence. The "evolutionary transformations" show this creativity. There are huge disjuncts in the proliferation of the forms. Such a disjunct is the transformation from the spore bearing plants to the flowering plants that appeared, suddenly, worldwide. Gerbert Grohmann in his study of plant form, entitled *The Plant*, states, "To conclude - as the evolution theory does - that lower forms of life developed into higher ones means to get lost in theories and thereby violate the fundamentals of science. We have proof of the fact that the higher organisms follow after the lower ones, not that they descend from them."⁸

Augros and Stanciu say that:

"Whole new orders appear suddenly and simultaneously, with no evidence of intermediate stages. These sudden bursts of new flora and fauna, so typical of the fossil data, are called radiations since the ancestral stock develops at one time many new body plans and diversifies in several directions at once. Mammals are a fine example. During the early Cenozoic era some 50 million years ago, mammals suddenly diverged into about twenty-four different orders ranging from bats to whales, kangaroos to elephants, and rodents to rhinoceroses."

"The pattern, then, is great clusters of diversified organisms appearing like Athena, full-blown from the head of Zeus. This typical pattern of radiation dramatically contradicts Darwinian gradualism. Darwin himself recognized this and called the sudden appearance and early diversity of flowering plants 'an abominable mystery.' "⁹

Mechanistic theories such as Darwin's gradualism or the doctrine of uniformitarianism (slow earth changes over long periods of time) in geology, have

endured not so much because of the logic of the theory but that they fit the prevailing social ideology so well. The increasingly "powerful" civilized human, "man the toolmaker," acting on inert, mindless matter is a welcomed image. The conscious power of an intelligent and balanced earth that creates the forms of life, in which the human is one, is not welcome news. To think that all of the life forms are part of the whole intelligent life of Earth like all of the forms in a cell are part of a cell's life, would frame a new ethical view. That image would come dangerously near causing us and the empire to question our way of life.

The mechanists of science have gone to great lengths to suggest that life has little power of conscious creativity. Their efforts to deny that animals think is laughable to anyone who has lived on a farm or ranch. Another intellectual sleight of hand is the creation of the concept of instinct. Instinct is a meaningless word that has long served the mechanists as an explanation for what could not at the time be explained or admitted. Is the honey bee society so conscious and intelligent in its own way that it can do the activities and constructions that it does? No, is the mechanist reply, "it's instinct." In creating new human culture we will be creating an assemblage of ideas, a thought form, which will be linked with biology. An expanded view will be taken of what mind is and how it fits with culture, biology and the earth.

The Psychobiological Perspective

The mind-set of industrial culture is conditioned by the cult of scientism. The reductionist view that matter is the only reality has become the cultural "common-sense" view. This is not in fact what the scientific method says. Empirical science observes, measures, quantifies and performs tests on things, with the understanding that the "things" have to be matter or none of this could be done. The actual scientific method makes no comment on anything outside the realm of matter that it tests. What has happened is that the body of repeatable experiments and "scientific laws" (one must be aware there is much dubious material travelling under this banner) has been raised to the level of "truth" and dogma. Science has become the bible by which truth and reality is verified by a mass culture influenced by years of classroom conditioning. Love, creativity, hope, consciousness, in fact much of the real non-material reality of life and activity has been relegated to insignificance by the cult of science.

The quest for power (military and other) through science has become the central focus of the industrial empire. In the broad view, science is the means to power whereby the empire culture more efficiently extorts the life force of the planet. (Scientific agriculture does not concentrate on building the life of the soil; it concentrates on producing heavier tonnages for market). The reality that science is an integral component of the imperial social system is shown by the fact that more than half of the working scientists of the U.S. are employed in the military-industrial sector. This is hardly a dispassionate search for truth, as the propagandists would have it. The scientific establishment is deeply implicated in the social apparatus of coercion and death as a means of political control.

The control of the public definition of reality- what humans are, what nature is, even the definition of life itself- is not just a matter of scientific dialogue, it is an item of central importance to the power of empire itself. If the context of reality in the public

mind is narrowed to a chemical reaction, people will more willingly march in lock step than if they were to realize the mystery, awe and immensity of reality. If the public is conditioned to believe that humans are with original sin, have an African primate genesis that is vicious and brutal, they will be more willing to agree to a military/police state. It will be just "common sense" to them that humans are so brutal that they can only be controlled by strong governmental force. If the public were to understand that each of us is a conscious being living within other conscious beings, such as Gaia, the whole life of the earth, the purpose of public life would change. This would threaten the status of the scientific/military/industrial elites who now control and profit from the production of material goods and the control of money.

Materialist science, is a cult. It is a mass social institution and also a method of knowing. It continues the split between Being and Doing and between body and mind. When we look at Natural cultures we see great attention to Being- in relationship to the world. When we look at the scientific ideology we see great attention devoted to abstracted Doing, with little attention paid to our inherent being. Da Free John (a.k.a., Franklin Jones) summarizes this difference which underlies the struggle of empire to control the life of the earth:

"The scientific establishment has been organized in league with the highest levels of concentrated political, economic and propagandistic power in the world today. Science is simply the primary method of knowing in modern societies, and its rule is established in no less an irrational and authoritarian manner than was the case with any religious or philosophical principle that ruled societies in the past.

"The method of science has now become a style of existence, a mood or strategy of relating to the world and to other human beings. That method now describes the conventional posture taken by 'Everyman' in every form of his relationship to the conditions of existence. Science has become a world-view, a presumption about the World-Process itself. It has become a religion, although a false one. And modern societies are Cults of this new religion. Can this new religion establish us as individuals and communities in right relationship to each other and to the World-Process? Absolutely not! Science is only a method of inquiry, or knowing about. It is not itself the right, true, or inherent form of our relationship to the conditions of existence, we cannot account for existence itself. And we are, regardless of our personal and present state of knowledge about the natural mechanics of the world, always responsible for our right relationship to the various conditions of experience, to the beings with whom we exist in this world, and to the World-Process as a whole. Relationship is inherently and perpetually a matter of individual responsibility, founded in intuition, prior to the analytical mind."¹⁰

The cult of scientism and empire has brought us to the brink of the death of the planet and the cult figures have no adequate response. The sad, one-dimensional leaders of empire challenge any new strategy meant to lead to health. If they don't like ecological restoration, what do they have to offer our collective grandchildren? If they don't like permaculture, let them then defend industrial agriculture. If they don't like population control, let's hear from them what they have to offer in view of the reality that we all see. Every patriarch in a position of power in every mass institution bears

responsibility. It is obvious now that their refrain of growth and material wealth is not the answer.

We need to maintain perspective on the cult of scientism. It is discredited by its works. We live on a rapidly dying planet. *We can't let the group that has led us to the brink of annihilation convince us that more of the same is a solution.*

All Is Mind

The philosophical materialists of the modern empire, including mechanist/reductionist science, Marxist and Capitalist political theory and even such things as modern industrial medicine, would have us believe that we are simply the manifestation of chemical reactions in the cells. In the estimation of the philosophical materialist, the knowledge that seeds have of when and where to germinate, the migration of birds, the complex self-regulation of organic bodies comes about because of chemical reactions. They assume that consciousness is a result of chemical reactions in the brain.

This, we would say is part of the whole accomplishment of empire culture to denature and de-sacralize life to the point of meaninglessness. *If we are conditioned to experience our lives as only marginally meaningful, we certainly will invest little meaning in the life around us.* The awe, mystery and wonder of the teeming life of our earth is reduced to a meaningless movement of substance.

Yet it is precisely the non-material that makes life real and meaningful. The test is in our awareness. Do we intuitively feel that our conscious awareness is some unexplained process of chemical and electrical reactions? It is joy, ecstasy, love and other feelings that make life worth living. In opposition to the dry pronouncements of science there is a rich fund of inherited wisdom. The large bulk of forager/hunters and aboriginals say they perceive a non-material, spiritual reality. They give varied impressions and descriptions of non-material dimensions.

Hindu yogis of ancient tradition, Hermeticists and others assert that *All is Mind*.¹¹ All is mind say the ancients. Form is created by the imaging power of consciousness. Form is created using consciousness as material. Consciousness is light. Form is congealed light vibrating at a lesser vibration than pure light.

When one looks out into the cosmos at night, one sees points of light. This light is the refraction of pure light striking the cells in our eyes. We know intellectually that the cosmos is full of pure light going in all directions from those stars but most of us cannot perceive that light that is not first refracted from something material. We see darkness.

From the Unseen to the Seen: The Manifestation of Material Reality in the Hopi View

We picture reality and its meaning through language. The inspection of the languages of different cultures reveal that each lives in radically different worlds. The semanticist Stuart Chase says, "There is no one metaphysical pool of universal thought. Speakers of different languages see the Cosmos differently, evaluate it

differently, sometimes not by much, sometimes widely. Thinking is relative to the language learned." The languages of the worldwide materialist empire, which are generally Indo-European languages, contain world pictures. They contain specifications of what a human is and contain specifications of what each human should aspire to become, in a linear manner. All of these word images are conditioning agents of the worldview held by the culture of empire.

On the other hand, the Hopi belong to a loose language group called Uto-Aztecan. Their language reveals a world that is much different than our own and to show the contrast, their language is closer to the concepts in Einstein's Theory of Relativity. According to some physicists, the Hopi language could have been used to express Einstein's theory that at present can only be fully described in mathematics.

Because this whole matter of linearity and linear increase as a cultural fundamental is so important it is productive to contrast the Hopi view with the one in our own heads. All humans are involved with the concept of time, or duration. One type of time is psychological time, which the Hopi would emphasize. This is duration as we experience it in consciousness, our conscious experience of what was and what is now. All of us have experienced altered states of consciousness to some degree and know that our experience of duration changes according to our level of concentration and other factors. The other concept of time is actually measurement. When we look at a watch we are looking at a measurement of cosmic movement. The circulation of our planet around the sun is divided into months, weeks, days, hours, minutes, seconds and so forth. The time on the watch face is not psychological time but the measurement of distance- the earth's travel and thus often, is not the time that we experience.

To the Hopi, there is the reality of the Here and Now manifest material world and then there is the unseen, not yet manifest reality from whence this present world came. In this part especially, the Hopi view reflects the basic pattern of our ancient cultural view that the material world is manifest from an unseen spiritual world with which we can be in communication and which we can influence according to our thought and behavior. Philosophy students will remember Plato's Idealism. This is a refined reflection of the view that was general in Natural culture. In Plato's view the material world with all of its forms is a more or less imperfect reflection of perfect ideas of form held in unmanifest dimensions of Being.

In any language into which this document could be successfully translated, there will be the concept of linear time. There will be past, present and future. This is the very psychological cornerstone of the myth of linear increase. Nonetheless in the linear time that is measured by distance of planetary travel, the earth doesn't really go anywhere but around in circles. Our mental appreciation of "time" that we gained from that measurement is turned into a linear progression that we think of mentally as starting in the remote past and moving through to a remote future in a linear manner.

Benjamin Lee Whorf, one of the early scholars of linguistics, examined the Hopi language intensely. He describes what he discovered of Hopi metaphysics:

"The metaphysics underlying our own language, thinking, and modern culture (I speak not of the recent and quite different relativity metaphysics of modern

science) imposes upon the universe two grand COSMIC FORMS, space and time; static three-dimensional infinite space, and kinetic one-dimensional uniformly and perpetually flowing time-two utterly separate and unconnected aspects of reality (according to this familiar way of thinking). The flowing realm of time is, in turn, the subject of a threefold division: past, present and future.

"The Hopi metaphysics also has its cosmic forms comparable to these in scale and scope. What are they? It imposes upon the universe two grand cosmic forms, which as a first approximation in terminology we may call MANIFESTED and MANIFESTING (or, UNMANIFEST) or, again, OBJECTIVE and SUBJECTIVE. The objective or manifested comprises all that is or has been accessible to the senses, the historical physical universe, in fact, with no attempt to distinguish between present and past, but excluding everything that we call future. The subjective or manifesting comprises all that we call future, BUT NOT MERELY THIS; it includes equally and indistinguishably all that we call mental-everything that appears or exists in the mind, or, as the Hopi would prefer to say, in the HEART, not only the heart of man, but the heart of animals, plants, and things, and behind and within all forms and appearances of nature in the heart of nature, and by an implication and extension which has been felt by more than one anthropologist, yet would hardly ever be spoken of by a Hopi himself, so charged is the idea with religious and magical awesomeness, in the very heart of the Cosmos itself. The subjective realm (subjective from our viewpoint, but intensely real and quivering with life, power, and potency to the Hopi) embraces not only our FUTURE, much of which the Hopi regards as more or less predestined in essence if not in exact form, but also all mentality, intellection, and emotion, the essence and typical form of which is the striving of purposeful desire, intelligent in character, toward manifestation-a manifestation which is much resisted and delayed, but in some form or other is inevitable. It is the realm of expectancy, of desire and purpose, of vitalizing life, of efficient causes, of thought thinking itself out from an inner realm (the Hopian Heart) into manifestation. It is in a dynamic state, yet not a state of motion-it is not advancing toward us out of a future, but ALREADY WITH US in vital and mental form, and its dynamism is at work in the field of eventuating or manifesting, evolving without motion from the subjective by degrees to a result which is the objective."¹²

The world of the Hopi is manifest or unmanifest. The manifest is that which has been "made", "solidified." That which is not yet "made" nonetheless exists in potential, in a world that is yet to work itself out into the objective "hardness" of this objective world. The Hopis in their effort to maintain the "balance" of the world, "work" on the inner subjective in the Kivas. Later, they will do the same in the elaborate ceremonials in the village plazas. They do this in order to "help" that which will become "made" in the objective world. A fundamental understanding of Hopi, and generally most Natural cultures, is that each person and tribe are conscious participants in the consciousness of the whole world. Thus the thinking, intention and balance of each person and tribe has an effect on the balance of the life of the whole. This is one of the aspects of what the Hopi mean when they say they are keeping the world in balance. The meaning of this statement is not that they are keeping the north and south poles in

their places. The statement is a simplification of a vast complex of meanings involved with the balances and manifestation of life.

The culture of empire has made the ability to create tools that more and more efficiently extort the life force of the earth, the basis of judgement of what peoples are "advanced" along the linear road and what peoples are not. When we look at the complexity of languages we see another way of viewing the richness of human culture. From a linguistic point of view, Whorf says:

"It causes us to transcend the boundaries of local cultures, nationalities, physical peculiarities dubbed "race," and to find that in their linguistic systems, though these systems differ widely, yet in the order, harmony, and beauty of the systems, and in their respective subtleties and penetrating analysis of reality, all men are equal. This fact is independent of the state of evolution as regards material culture, savagery, civilization, moral or ethical development, etc., a thing most surprising to the cultured European, a thing shocking to him, indeed a bitter pill! But it is true; the crudest savage may unconsciously manipulate with effortless ease a linguistic system so intricate, manifoldly systematized, and intellectually difficult that it requires the lifetime study of our greatest scholars to describe its workings."¹³

One does not think about the structure of the language that one is using when a conversation is going on and neither does one think of the subconscious assumptions of culture contained in the language. In 1975, Dr. Freda Morris, clinical hypnotherapist and author of *Hypnosis With Friends & Lovers*, first began discussing the hypnotic nature of acculturation. In a recent book she says, "The absorption of our own cultural traits as we grow up is itself a process of slow hypnosis-as powerful posthypnotic suggestions are built up by the slow deep implantation of certain cues that vary from culture to culture."¹⁴

The Illusion of Matter

The cosmos is energy in motion. As some recent physicists say there is no "thing" there- in matter. Those "things" wearing the labels of neutrons, electrons, quarks and so forth are simply energy in motion at such speed that to us it appears hard and real. "THE ALL is MIND; The Universe is Mental," declares the *Kybalion*, an esoteric text of ancient lineage. "Nothing rests; everything moves; everything vibrates," it says.¹⁵

Form, is held in consciousness. Form is held in consciousness by the memory power of mind. Just as the operations of typewriting or piano playing are at first highly conscious but then become habits on a less conscious level, it is proposed that biological form exists in cosmic consciousness as "habits of mind."

Although orthodox biology has been dominated by the mechanist/reductionist and Darwinian schools of thought there have been a few Vitalist biologists through the years maintaining that, in addition to matter, there is a non-material, vital element present in life. Through each decade there have been a few of these biologists on the periphery of orthodoxy. Recently new developments, that could be looked upon as related to Vitalism, have occurred in biology. These researchers seek to explain the elaboration of the form of each organism by means other than the physio-chemical.

Rupert Sheldrake has created a body of thought concerning fields leading to the creation of biological form.

Sheldrake participates in a school of thought called Morphic Resonance. The biologists of this school say that biological form is created by immaterial morphic fields, fields of force that create forms. Sheldrake advances this notion in two recent books, *A New Science of Life: The Hypothesis of Formative Causation* (1985) and *The Presence of the Past; Morphic Resonance and the Habits of Nature*, (1988).¹⁶

What is it that Creates Forms?

A serious problem has existed for the mechanist scientists for many years in their attempts to explain the development of form from embryo to maturity. What is it that guides the development of the form? What is it that holds the form in its shape as the cells and other substances change in the body? Recently the lay persons have been led to believe that it is the DNA code that does this, but when we get down to specifics, we find that the genetic researchers do not go so far as to say that DNA completely controls the development of form. They only say that DNA is related to the final characteristics of form. The DNA in the arm is the exact copy of the DNA in the leg. They are duplicates; there is nothing different in them that could explain the differential development of the form of the arm or leg. Recently science commentators have compared the DNA code to a computer program and have made the analogy from the computer codes, to the computer output, but even here, in this case, some person created the computer and the software.

Author Edward W. Russell wrote the book, *The Fields of Life*, which discusses the work of Dr. Harold Saxton Burr, which concerns immaterial force fields that participate in creating biological form. Russell points to the logical problems involved in the confusion of the creation of form and DNA. He states:

"A part cannot be a matrix for a whole; a simple design cannot be a blue-print for a more complicated one. As a functioning organization, the body is more than the sum of its components. Genes and DNA molecules are simpler organizations than the organization of the body as a whole.

"It is true that DNA-fans credit molecules with anthropomorphic powers, in much the same way as primitive tribes attribute human attributes to idols of stone or wood. They solemnly assure us that Molecule A has all the information needed for heredity, that Molecule B passes this on to the cells while Molecule C assesses the needs of the cells and restrains A and B from getting too enthusiastic. But nobody has so far explained how Molecule A got the information in the first place, how Molecule B distributes it and how Molecule C can judge anything, let alone check A and B."¹⁷

Author Richard Moss, a medical doctor reports on this matter of the development of the form of fetuses:

"...There have been experiments with the developing frog embryo where, at a point in its development when it has begun to differentiate the left and right arm buds, the embryo can be cut in such a way as to rotate the arm buds. The

left arm bud ends up on the right and the right arm bud is on the left. Yet, instead of going on to develop the displaced left and right arms, the embryo matures and that which began as a left arm turns into a right arm and that which would have been a right arm turns into a left arm.

"There is nothing in the genetic material as we understand it that should account for the interruption of a normal process by a human experimenter. If life unfolds simply through the material maintained in the genetic pattern then this realignment should not occur."¹⁸

Cells are individual conscious entities that participate in collective consciousnesses at various levels. There are many varieties of one-celled beings who do not live in cell communities but spend their lives free and self-regulating. When cells join in cooperative association they do not lose consciousness any more than a fish in a school. Although not popularized by the mechanist orthodoxies of the universities, there is a body of empirical evidence indicating that there is more to organism than simply chemical reactions. Dr. Harold Saxton Burr has spent much of his life experimenting with electrical fields that envelop all organic forms. We need keep in mind that all form is of a field nature. When we put iron filings around a magnet we see the shape of an immaterial field. When we examine matter we see an atomic field that assumes many forms. The nature of form is that it has boundary. Organic forms have the familiar material boundaries (skin) that we see and then there is an electrical envelope outside this boundary that has been studied by Dr. H.S. Burr. This envelope is an extremely weak, direct current electrical field, extending out less than an inch. This field exists around all organic forms. There are also other energy fields such as the alternating current fields of electricity extending out from various regions of the human body, but none of these encompass the whole body. Dr. Burr was interested not so much by the fact that such a field exists but by the fluctuation of energy potential in these fields, which resonated with terrestrial and extra-terrestrial events. By monitoring the direct current field around living things, Dr. Burr found that the change in potential energy of this field correlates with specific events both internal and external to the body. This energy field that Burr studied is the same as the energy field that is monitored by the lie detector (Electro-Galvanic Skin Response Machine). The lie detector monitors fluctuations of the emotions. It is important to note that the field of electricity itself is probably not the emotion but a by-product of its functioning. The symptomatic fluctuation makes it possible to monitor the actual phenomenon. By his study, Burr found that each of us is a participant in the metabolism of the solar body through this field. Fluctuations in energy potential of this direct current field correlate with the lunar cycle and the sun spot cycle. He also discovered that by monitoring the field, the ovulation of the human female could be spotted exactly, a matter of extreme importance to the human family. The electrical monitoring indicates an immaterial force that both controls and is controlled by the material. It is an integrated whole. It has long been a question in biology of how the form of cellular organization maintains itself while the substance changes. The question of how the cells of the foetus create the form of the child or the cells of an organ recreate its form after an injury has remained a mystery. Living organisms are a flow system with intake of material being transformed into proteins, cells and fluids. The rule of thumb is that the entire human body is cellularly replaced in a seven-year period. Although the materials of the body are in constant flux, the form of the whole does not change, except slowly with age.

Dr. Burr found that the control field, which he was monitoring electrically, is a guiding field, or more specifically a partially guiding field. He sets out a hypothesis that he states in the following manner:

"The pattern or organization of any biological system is established by a complex electro-dynamic field which is in part determined by its atomic physio-chemical components and which in part determines the behavior and orientation of those components. This field is electrical in the physical sense and by its properties relates the entities of the biological system in a characteristic pattern and is itself, in part, a result of the existence of those entities. It determines and is determined by the components.

"More than establishing pattern, it must maintain pattern in the midst of a physio-chemical flux. Therefore, it must regulate and control living things. It must be the mechanism, the outcome of whose activity is wholeness, organization, and continuity."¹⁹

Burr's research led him to the discovery that by monitoring the energy field he could determine the longitudinal axis (spinal column) of an unfertilized salamander egg. As he monitored it after fertilization his monitoring of the immaterial guiding field indicated that the spinal column remained congruous with the electrical polarity throughout its development. That is, the guiding field was there before fertilization and remained there as the guiding field, as the biological form unfolded. Burr went further and demonstrated that the guiding field not only participates in guiding the development of form but also is always at work with the living organism. Burr used a rudimentary protoplasmic being called plasmodium for his experiment that indicated activity in the immaterial field before activity was seen in the material. He explains:

"Under the microscope, it is simple to demonstrate that every 60 or 90 seconds the protoplasm in the veins reverses the direction of flow. The electrical pickup from the vein, combined with the moving picture, reveals that in the majority of instances polar reversal of the voltage occurs before there is a directional change of the plasmic flow, but also there are many instances where the change in both phenomena seem to occur simultaneously."²⁰

Although Burr's work never gained the attention of the orthodox, whose view would deny this possibility, it nonetheless gives us a direction to proceed. What Burr's work indicates is that we are intimately involved with unseen fields of energy. With Burr's methods of monitoring, the depth of a trance state can be followed while a person is in hypnosis. In the experiments done with hypnosis, Burr and his associates found that having the hypnotized subject remember highly emotional situations caused the electrical field to change (therefore its value as a lie-detector). Burr also found the cosmic fluctuations of moon cycle; sun cycle and sunspots caused changes in the electrical potential of field, thus giving us evidence of the intimate connection of our bodies and emotions to cosmic events. In addition to being simply another piece of evidence that everything is connected, the Burr material shows an interaction between a force field that can be monitored by its electrical side effect and the physical organism. It suggests even further that important aspects of the control of the material form exists in this field.

The Creation of Form - Morphic Resonance

Mechanistic science does not emphasize consciousness. Consciousness and any of its possibilities are unmentioned aspects of life that still are left in mystery. For example the kind of problem that might come up is how to explain memory. The molecules, especially proteins, of our bodies are replaced in days or months, at most. So how does the memory of early childhood continue to exist in the proteins of the brain cells of an elderly person? Is it encoded somehow in a chemical reaction? Mechanistic science because it does not acknowledge the immaterial will not consider consciousness and its abilities, but continues to dissect brains and molecules attempting to fashion an answer. With his hypothesis of formative causation Rupert Sheldrake has pointed a way out of the dead-end and looks at "effects" then argues back to causes. Though he does not mention consciousness, he suggests fields as an explanatory term. Sheldrake says that fields are non-material regions of influence and he points to gravity as an illustration of this. Gravity holds us to the earth. Because of the precise force of its pull our own bone structure is engineered. If our bones were longer or thinner or of weaker substance we would not be able to function on the surface of the earth. In this manner this field structures us and all other things on the earth's surface.

The energy field of the solar system has been discussed. This field with its many different types of energies certainly has an effect on the forms within it, such as the nature of biological life on earth.

Electro-magnetic fields are familiar non-material force fields. These fields of electrical vibration bring us radio and television. Physicists measure electron fields, neutron fields and there are force fields even within atoms, they say. These recognized fields are non-material with effects in the material that can be experimentally measured. Though immaterial, these fields can be seen as controlling the material in some manner. Sheldrake says:

"The nature of fields is inevitably mysterious. According to modern physics, these entities are more fundamental than matter. Fields cannot be explained in terms of matter; rather, matter is explained in terms of energy within fields. Physics cannot explain the nature of the different kinds of fields in terms of anything else physical, unless it be in terms of a more fundamental unified field, such as the original cosmic field. But then this too is inexplicable-unless we assume it was created by God. And then God is inexplicable.

"We can, of course, assume that fields are as they are because they are determined by eternal mathematical laws, but then there is the same problem with these laws; how can we explain them?"²¹

In Sheldrake's thinking, the shape of each organism is guided by a morphogenic field. (The coming into being of form is morphogenesis). The morphogenic field of that organism resonates with the other fields of that species of organism that have gone before. Form resonates with form irrespective of the time frame in which it occurs. In his thinking, these fields are beyond our "normal" experience of space and time.

Each individual organism is in a guiding field that resonates with all others of that specific form that have gone before. Here Sheldrake says that the inherent capacity of memory and habit is instrumental. Just as many of our daily routines were learned with conscious attention but have now fallen below the level of conscious awareness and become habit, Sheldrake says it is memory and habit that are essential to the functioning of these formative fields of living things. The forms of organisms are in continual flux, says Sheldrake. As the flow of biological life goes on, new habits are slowly formed and go on to be incorporated into all newly developing organisms of that species. He offers many examples of the functioning of the morphic resonance of behavior patterns within species and a clear example is of the well documented development of a habit among a bird species residing in England, the blue tits.

Sheldrake says that in the case of the blue tits, they are very territorial, seldom straying more than a few miles from their breeding place. Yet a new habit resonated through the species all over England.

In Southampton, in 1921, a blue tit was observed to peck through the foil cap of a milk bottle, tear the foil back and drink from the bottle. The spread of this habit was recorded at regular intervals from 1930 to 1947. There are eleven species to which this habit has spread but it is most frequently confined to great tits, coal tits and blue tits. After the first observation of this "milk poaching," the habit was seen to spread rapidly through England where sometimes flocks of tits would follow milk delivery people through the neighborhoods waiting for the milk bottles to be put on people's porches. The detailed studies of this phenomenon show that the habit was independently "discovered" by individual tits 89 times in the British Isles. In the view of morphic resonance, this habit pattern resonated within the tit species and the pattern was then increasingly manifest by individual tits. During World War II milk deliveries in England stopped for the duration that was longer than the normal tit life span, yet when milk deliveries commenced again, tits all over England again began to take up the habit. After the war, "It seems certain that the habit was started in many different places by many individuals," researchers said. The habit also spread to Sweden, Denmark and Holland.²²

The case of the blue tits is of behavioral form, or behavioral morphology. It also shows the resonance of habit over space and time. In the matter of the physical form itself, Sheldrake's other major point is that forms, themselves are habits of nature. We have the example of what in orthodox science is called "parallel evolution" which relates to habits of form. There are many examples of "evolutionary convergence" where biological forms from dissimilar species and different continents end up having similar or almost identical form or function- or both. There is also the popular illustration of the parallelism between the placental mammals and the marsupials of Australia. In Australia there is a marsupial flying phalanger that is almost a duplicate of a mammalian flying squirrel. In the southwestern U.S. there is a rodent called a kangaroo rat. In Australia there is a marsupial that is the same form. There is even a mole-like marsupial (except it has a chitinous beak like a duck-billed platypus) in Australia that lives and behaves like mammalian moles. The mechanists have gone through many intellectual contortions to explain these similarities but it is difficult when one assumes the life on earth to be "chance chemical reactions." Morphic resonance on the other hand gives us a much better tool with which to think about this subject. The group consciousness of aggregates of discrete, individual organisms

further shows that there must be something other than chemical reactions directing organisms. There are many invertebrate organisms that live in colonies such as anthills or beehives that are so highly organized and differentiated that they appear to be unitary organisms. Sheldrake points to the order Siphonophora which resemble the unitary, multicellular jellyfish but contrarily, are actually made up of individual organisms acting in concert. These assemblages live in open oceans. He says that *Nanomia*, a member of this order;

"...consists of many specialized individual organisms. At the top is an individual modified into a gas-filled float. Below it are organisms that act like little bellows, squirting out jets of water which propel the colony; by altering the shape of their openings they are able to alter the direction of the jets. Through their co-ordinated action the *Nanomia* colony is able to dart about vigorously, moving at any angle and in any plane, even executing loop-the-loop curves. Lower on the stem there are other organisms which are specialized for the ingestion and digestion of nutrients for the rest of the colony. Long branched tentacles arise from them and are used to capture prey. There are also bracts, consisting of inert, scalelike organisms that fit over the stem and help protect it from physical damage. Finally, there are sexual organisms, which produce gametes which through fertilization can give rise to new colonies."²³

With *Nanomia* we have the extreme blurring of the distinction between colony organization and "unitary organism." We see also the difficulty of explaining how all of these "individual unitary organisms" instantaneously coordinate if all they are is a mass of chemical reactions. The *Nanomia* poses some difficulty of explanation for the DNA influenced mechanist but none for a viewpoint of morphic resonance where fields are "nested" within fields. A molecule is a community metabolism, a cell is a community metabolism, and so forth for groups of cells as organs and organs as bodies, insect communities, particularly ants and termites, and we then carry this cooperative metabolism through whole ecosystems, ultimately to the being of the planet itself.

There are many examples of group consciousness in the natural world. Another fascinating group being is in the family of fungi. It is *Dictyostelium discoidium*, a slime mold. Individual organisms of this species live spread out in local areas of a forest floor where they live separately, and survive by eating bacteria. Each of them is about 5 microns in diameter, which means it would take some 200 of them to cover the dot of an "i." Because of their size, researchers say, to move twelve inches would be like a seventy-mile trip for humans.

After some generations of moving about feeding on bacteria, the organisms' food supply becomes exhausted. When this happens a hormone-type substance is released from a few key individuals which constitutes a signal and the individuals all head for that spot. Then, they mass into a clump that may number 100,000 individuals, measuring a few millimeters across. When the mass is assembled it resembles a slug complete with individuals that function as "eyes" and others who serve as "feet." When all is ready, the slug goes off across the forest floor looking for greener pastures, travelling on a coat of "slime" that the assembled group excretes. When it reaches an area to its liking it tips up on end and the slug changes into a form

resembling a tiny mushroom with a long thin stalk. When it has achieved this new, similarly highly organized and complex structure, the small bulb at the top of the stalk emits spores, which begin a new cycle of individuals who multiply both by splitting and sometimes by sexual congress. Biologists have learned that the voluntary assembly of the slug can be artificially broken apart and the individuals can go back to being individuals if there is food nearby but, by the time the slug reaches the stalk and spore cap form, the individuals cannot return to their previous life as individuals. After reaching this point when spores are put out to create the new generations, the old body with all of its individuals dies.

Here again the importance of consciousness is dealt with in biological functioning. The slime mold and *Nanomia* are examples where the distinction between individual and group consciousness becomes very blurred. Nonetheless the primacy of consciousness in each individual is paramount in order to coordinate the physical actions of the colonial being and its group consciousness.

It has been proposed that the earth is a conscious entity as are all biological forms and that the consciousness of individuals can co-mingle in community, or colonial beings. It is plain that the colonial organisms have a purpose (to continue their lives by feeding themselves) and there are indications that Gaia itself has purposive intent.

Human scholarship has not focussed on the functioning of conscious wholes the way it has focussed on the behavior of the inert parts in atomic physics and molecular chemistry. Even so, we do have some hints that the consciousness of the whole earth functions even in an anticipatory way.

Does the Life of the Earth Have A Plan?

Gerbert Grohmann, who was a student of Johann Wolfgang von Goethe and of Rudolph Steiner, suggests that biological form, when looked at as a project of the planetary whole, has undergone simultaneous change across the whole world at the same time. There have been periods during the development of biological forms on the earth during which form changed en masse. An example is the leap from spore bearing to coniferous and then to flowering plants. This is akin to the body of the earth undergoing transformation. These periods represent leaps in the change of biological form. Pertaining to the plant family Grohmann says:

"All phylogenetic [phylum=race or strain] development is discontinuous. Leaps are made and gaps divide the different stages. The facts demonstrate this clearly. The materialistic principle of the continuity of substance and force applied to the history of evolution inevitably leads to contradictions. The crest of the first wave of the development of plants growing in soil is the carboniferous flora; however, with the end of the Paleozoic Era, which for the plant kingdom lies between the Lower New Red Sandstone and the Permian Limestone period, this highly developed flora with its many very distinct species has vanished almost completely. One could hardly have a more impressive fact than this. After the Triassic Red Sandstone period, which is characterized by its scanty plant growth, a new beginning is made: the flora of the Mesophytic Era. The former vegetation, however, did not develop further.

"During the Mesophytic Era we again find highly developed plants of a special character, particularly in the Jurassic and Chalk formations. But this climax is also an end. In the Upper Chalk the rich variety of forms has disappeared. Suddenly, flowering plants spring up without warning, simultaneously in many different parts of the world. We need not violate palaeontological facts in order to find, for each of these great periods, one characteristic plant organ. In the carboniferous period it is the leafy vegetative shoot, corresponding to the fern. In the middle period (Mesophytic), with the predominance of conifers, Ginkgoes and Cycads, the leaf-stalk type of plant has risen to the stage of seed bearing. In the next period, Upper Chalk and Tertiary, the real flowering plant finally appears."²⁴

Grohmann points out that the change of form occurs across the biological spectrum during these "evolutionary leaps." As the fern series comes to its end it begins to show form that is anticipatory of the cone bearing plants but the substance of the fern cannot carry the trajectory on because the actual tissue material could not sustain it. Grohmann says; "Organic evolution does not entail only progressive transformation of forms, but the very substance must be developed from stage to stage in order to create the conditions suitable for a certain level of organization."²⁵

As the form of the fern reaches its end and it begins to develop form prophetic of the soon to appear cone bearing plants, the ferns do not continue to transform and become cone bearing plants. The ferns die out as predominant plants and new plants appear that are the cone bearing plants with substance organized appropriately to support the new form.

Grohmann's work points to avenues of thinking that are even beyond the morphic resonance of Sheldrake- that the resonance of form shows evidence of some plan that precedes the creation of form- anticipatory, creative thought on a grand scale. This goes beyond Sheldrake's careful documentation to suggest an active intelligence involved in creating the forms of life. What is being considered here is an inversion of the civilized perspective. What happens in consciousness is instrumental in events in the material, biological world. Without this understanding we will be greatly hindered in creating new human culture.

The Social Conditioning of Human Health

We of contemporary society have been conditioned with the image that health is a personal problem. Beyond that we are led to believe that health is a matter of chemistry. Being chemistry, health can then be ministered to by the vast establishment of the chemical/pharmaceutical industry. The medical establishment which is the third largest industry in the United States, just behind petroleum and war machines, is a direct expression of the structure and ideas of empire and the manner in which that culture relates to living things. Much like modern agriculture, the medical industry is a vast array of industrial institutions which produce chemicals, medical machinery, design and build hospitals with specialized architecture, produce computer programs for doctors offices, and operate massive medical education establishments and so forth. Because health care in the view of the scientific establishment, is chemistry, the focus of attention is on blood samples, tissue samples, biopsies and such. Within the system little attention is given to the person, their dietary habits, the air they breathe,

their living conditions or other factors. The establishment exists for profit and the aggrandizement of those who direct it. The personal life and well being of the client is unimportant. It is chemistry (called molecular medicine in the trade) that the medical establishment focuses upon. In fact, within the functional operation of the medical establishment the more unhealthy the population, the higher the profits. For decades the damage from birth trauma caused by hospital birthing practices have been known. Little has changed because those practices are there for the convenience and efficiency of the institution itself.

Public health researchers, by and large, are not part of the medical establishment. They have a much more holistic perspective in that they look at the statistics of the health of whole populations. By looking at their work we begin to see to what extent the individual is shaped and conditioned by the group consciousness of the tribe or in this case a mass society. We begin to see that ideas held in the mind (culture) effect biological systems. We see the importance of creating new human culture with great attention.

The tumor body of empire is a planetary medical problem. It is progressive disintegration of the life system. The "material advancement" of "man the toolmaker" is held out to the public mind as a symbol of "progress." Meanwhile, in real terms, we have seen that health, diet and longevity severely declined when empire began.

The reality is that culture can condition us so that it actually causes disease. On the positive side of this we find that culture, if it is properly formed, can lead us to health and positive emotional condition.

Leonard A. Sagan, who is a scholar of Public Health, has authored a study that argues convincingly that individual health has little to do with industrial medicine but is a reflection of the quality of social experience. In his study, *The Health of Nations: True Causes of Sickness and Well Being*,²⁶ Sagan demonstrates that the increase in population and longevity began before the rise of modern medicine, childhood death from infectious diseases began to decline long before anti-biotic chemicals and that modern medical care has little effect on public health. Sagan convincingly demonstrates that psychosocial changes have been responsible for the increase in life span and the increase in immunity. His study shows those social conditions directly effect human health. With the expansion of the World Empire, the economic condition of Europeans and those of the European colonies began to improve and the personal and social expectations of the people began to rise. The stability and strength of what we know as the "modern family" increased. The conditions of life of the Industrial Revolution period began to fall away as working people forced demands upon the elite for the eight hour day, better working conditions and a greater share in the social benefits. As the masses forced an opening in the social fabric, the people had more hope and aspiration in their lives. They began to throw off the slave psychology and hold themselves in more esteem, which is what Sagan sees as the key to personal health, a strong sense of self esteem built upon a social foundation that provides at least for the necessities of life. In the larger context this means that the elite of civilization, by sacrificing the life of the earth, have climbed back up to conditions Natural people already enjoyed. But what is being explored is how social conditions affect health.

Sagan shows that the decline in mortality rates began prior to the great sanitary movement of the nineteenth century. He states,

"It was not the decline in infection that caused the decline in mortality rates but rather a decline in death rates of those who were infected."

High rates of infection persisted until very recent decades. The majority of deaths among infants are not due to microbiological agents transmitted through the food and water supply but rather are from microbiological agents commonly present in the environment; the deaths are the result of infection with viruses and other ubiquitous organisms, which will inevitably result among infants with lowered resistance.

"The decline in mortality from infectious diseases has been as dramatic among those diseases that are spread from person to person, such as tuberculosis, where sanitation efforts are ineffective, as among those that are spread through the food and water supply or through insect vectors."

Sagan continues by saying, "Finally, there is another explanation for the decline in deaths from infectious diseases, namely, an improvement in human resistance."²⁷ Sagan introduces public health studies to show that modern medical care has little correlation with public health and that nutrition (above the malnutrition rate) does not correlate with public health. It will be a surprise to all of us who have been subjected to a lifetime of propaganda conditioning by the medical establishment that numerous studies show that the less food people have the healthier they are and statistically, the more doctors there are per capita in First World countries, the higher rises the infant mortality. A comparison of eighteen present industrial societies shows that higher infant mortality correlates with the increased number of doctors. Further, studies show that there is no correlation between public health expenditures and decline in death rates in these countries.²⁸ To add another startling series of statistical studies, he points out that although there have been mortality rate changes concerned with specific organ sites, the risk of dying of cancer once it starts is no different than it was fifty years ago. The incidence of cancer has gone up tremendously but once one has cancer, the risk of dying of it has not changed in fifty years even given the tremendous investment in cancer research and treatment.

So what has caused the increase in health according to Sagan? His studies point to the increased strength of the nuclear family. In the larger context we saw the destruction of the tribe, the clan, extended family and finally the Industrial Revolution wiped out communal peasant existence. The slow climb back to simply a nuclear family for Europeans has been at the expense of the colonized world because of increased wealth trickling down to the masses in the imperial centers. Beginning with the Industrial Revolution and lasting up until well into twentieth century, what there was of family life was grim. Child labor took them out of the family at an early age. Labor hours for everyone were long and continuous; housing, wages and the conditions of life almost precluded a stable, nurturing family. Sagan points out that only recently has any attention been devoted toward the nurturing of infants and children. Many studies have shown that nurturing during infancy affects infant mortality, I.Q. levels, physical stature, and illness rates. The loss of one or both parents, indicating family influence, is even better known because of the greater ease of statistical comparison. For

example, for a person who has lost both parents the suicide risk is seven times greater than a person from an intact family. In another study that Sagan cites, of college students who had been separated from a parent during childhood, nearly half had serious thoughts of suicide, whereas students who came from intact families only demonstrated a 10% incidence of such thoughts.

In a study from Johns Hopkins Medical School, 1,337 medical students were studied. In this study it was found that closeness to parents and the father's age (the older the father, the greater the incidence) at the time of the subject's birth strongly correlated with later suicide, mental illness and tumors. In a study at the University of Pittsburgh it was found that parental loss- death of a parent, separation or divorce of parents, correlated with a 25% increased chance of gastric neurosis, 35% for duodenal ulcer, 36% for psychoneurosis, 38% for alcoholism, 45% for rheumatoid arthritis, 55% for accidents, 55% for tuberculosis, 62% for delinquency and 70% for suicide.

Not only does early childhood experience in the family affect health and mortality but also the strength of the fabric of society affects the health of the family. In Natural culture the clan social environment was the norm. Now, the nearest thing approaching the clan is therapy and support groups. Though these groups have been only a fragile reflection of the clan, they are never the less of great aid to the individual members. Sagan finds that married people as a whole, have lower death rates than people of the same age who are single or widowed and the death rate for married persons is half that of divorced people. An elaborate study conducted in Alameda County, in northern California, clearly demonstrated that social isolation, "... Was associated with increased mortality from ischemic heart disease, cancer, cardiovascular diseases, and all other diagnoses, including suicide and accidental death."²⁹ In reality living in the social conditions of an empire is as destructive to humans as war.

While the military is an instrument of war and death, in reality, simply the socialization it provides in human camaraderie actually decreases its member's mortality rates (outside the battlefield). Individuals who actually experience military society have better health ratings than others do. Sagan cites studies showing that, "... Mortality rates of servicemen are significantly below that of the U.S. population generally. For all personnel ages seventeen and over, the death rate is only 57 percent of that of non-military people of the same age."³⁰ Another study, in Massachusetts, indicates the influence of social disintegration on health. It has shown a correlation between poverty, social isolation and cancer risk.

The relatively small group of people in industrial societies, who have statistically better health and longevity also have social advantages well above the norm, Sagan finds. This is the group who has a firm social foundation as infants, who have avenues of advancement and who have, because of social privilege or unusual families, been enabled to gain optimism and self esteem.

Studies from many industrial nations show that longevity is, looked at as a whole, a function of social class with the longest living group being the wealthiest. Studies in England, where universal health care has been in place a long time, show that the provision of health care makes little difference in these statistics, before or after the institution of a universal health care plan. Further to the point that health is a

psychological matter influenced by social conditions, is the link between education and health. Sagan says:

"The mortality differences between those of the least and those of the highest [educational] achievement are very great, more so for women than for men, and are greatest among the middle-aged; females who have had four or more years of college have half the death rate experienced by those with little or no education. Differences in mortality among educational classes exist for a broad spectrum of diseases, the greatest differences occurring in deaths due to infectious diseases. Men with the least educational achievement experienced death from tuberculosis at a rate 776 percent higher than those with the highest educational level."³¹

The link between mental-emotional state and health is much stronger than the simple wealth-health link Sagan says. "The studies seem to favor literacy as being directly linked to health rather than as a proxy for other variables. That is, the statistical association between literacy and health is consistently stronger than that between health and income."³²

Following his review of social/personal health in modern industrial societies, Sagan details the personality attributes of those that live the longest and have the least illness. First, he says, they have a high level of self-esteem. They have a high regard for themselves but they are committed to goals other than their own personal welfare. These healthy people place high value on health and survival. They are future oriented. They are trusting and easily enter into social networks. They relish companionship, yet are not uncomfortable when alone and seek periods of contemplation and aloneness. Finally, he says that these people seek knowledge beyond formal education. He quotes Aaron Antonovsky of the Ben-Gurion University who says these people have a sense of coherence, a global orientation that expresses the extent to which one has a pervasive, enduring though dynamic feeling of confidence that one's internal and external environments are predictable and that there is a high probability that things will work out as well as can reasonably be expected."³³

The pattern that is described fits well with what we know about the situation of forager/hunter tribes who relate to the ecological and spiritual whole around them.

Sagan shows quite adequately that health in a cosmic context is related to the question of identity and to positive emotional level. These factors exist in consciousness. Culture also exists in consciousness. An individual can be injured- the effect of the mind upon the body- simply by being conditioned into empire culture. The world industrial empire has passed the cusp of its development. The easily grasped "resources" are gone and the population explosion is in full acceleration. The flow of resources that floated the wealth of the First world populations up to the standard of Natural human culture are now declining and the disintegration of the family, especially in the U.S. is increasing. Sagan shows that the breakup of the nuclear family is showing a rapid increase, teenage pregnancy is increasing rapidly, as well as child abuse. All of these factors will have definite effects across the population. Sagan states that morbidity is increasing, particularly among children and that the evidence is that the health of the U.S. population is now going down. He concludes by saying,

"As the modern nuclear family has come unglued, crime, suicide, and drug use have soared, just as have divorce and teenage pregnancy while scholastic achievement has declined. These associations and causal relationships have yet to be widely appreciated."³⁴

The Medical Question of Identity

While Sagan offers the knowledge of a specialist concerning the statistics of health and social relationships, there is a larger context. This context is of true organic identity. We are seeing the rise of illness that is associated with psychological stress and with the autoimmune system. Psychological stress is a function of the reality one identifies with. If one is thoroughly conditioned and identifies closely with the immediate day to day social reality, such as the daily crises on television news programs, one experiences more stress than if one identifies oneself as an organic being functioning among other organic beings on the planet earth. In the case of the autoimmune system a deeper level of consciousness is at work. AIDS, cancer, allergies, asthma, candida albicans, lowered resistance to infection and other illnesses are related to the functioning of the autoimmune system. For example in the case of cancer, people get cancer every day. That is, a few cells in the body malfunction and do not replicate as they should. These cells are normally then consumed by the body. The consciousness of the body decides that they are not self- but other. The autoimmune system is directed by consciousness, not chemistry.

The same situation exists with the populations of the microorganism candida albicans. Normally, the population levels of the candida in our bodies are maintained at a beneficial level but in some cases, such as after over-doses of anti-biotics, the autoimmune system seems not to know its identity, the difference between self and other. When this happens the populations of candida explode without the autoimmune system controlling them. At that point serious illness develops. Here we have society and the person, living out of cosmic balance and then the vegetative consciousness of the individual body becoming out of balance. The problem on all three levels is that the being does not know what it is. Like the cancer cell, it has lost its sense of identity within the cosmic pattern.

Life and its consciousness cannot be fooled. We may act in an objectified, machine-like manner, we may begin to resemble the machine artifacts that we have created, we may even begin to believe that we can live in a machine culture with no more humanity than an internal combustion engine, but we cannot escape the fact that we are organic beings with a unique birthright and ancestry just like other species. What Sagan's material shows is the necessity of focussing on social environment in our new culture. There is also the necessity of having that social environment grounded in the pattern and principles of biological life. We must first know that we are within the body of Gaia. As we heal as a social body from the disease of empire, it is particularly the children upon whom we must focus. As we adults begin to create the new culture in a healing, therapeutic environment, we must be able to have fewer children but focus more attention on them.

We are discussing a leap that will be generations long. The present crisis is so profound that it will be many generations before "normalcy" returns. We are creating healing cultures whose basic patterns are such that we expect them to weather the

events. It is the children and their children who will be living through this. We want these children to have the best possible opportunity. It is obvious from the material that has been examined that the clan structure is without doubt the most important ingredient in a person's later life. Given these considerations a new culture would be child centered and secondarily focussed on women of childbearing age. This is our hope for the future, the children. If we can function in therapeutic community to create a positive emotional environment and raise children without emotional crippling, then we will have provided the foundation for their lives.

It is not we who will be the final result of the cultural creation but they who must climb upon our shoulders, who will teach their children of the illness we have suffered and the positive direction that they must follow. In nurturing the children, we nurture the new culture.

NOTES

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4 *ibid.* p. 89

5 *ibid.* p. 105.

6 *ibid.* p. 114.

7 *ibid.* p. 155.

8 *The Plant*. Gerbert Grohmann. Rudolf Steiner Press. London. 1974. p. 198.

9 Augros & Stanciu. *The New Biology*. op. cit. p. 173.

10 *The Transmission Of Doubt: Talks and Essays on the Transcendence of Scientific Materialism through Radical Understanding*. Da Free John. The Dawn Horse Press. Clearlake, Calif. 1984. pp. 95,96.

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21 Sheldrake. *A New Science of Life.* op. cit. p. 99.

22 *ibid.* pp.177-180.

23 *ibid.* p. 226.

24 *The Plant: A Guide to Understanding its Nature.* Gerbert Grohmann. Trans. K. Castelliz from *Die Pflanze*, Vol. I. Rudolf Steiner Press. London. 1974. pp.195,196.

25 *ibid.* p. 201.

26 *The Health of Nations: True Causes of Sickness and Well Being.* Leonard A. Sagan. Basic Books Inc. N.Y. N.Y. 1987.

27 *ibid.* p. 41.

28 *ibid.* p. 81.

29 *ibid.* pp. 135,136.

30 *ibid.* p. 138.

31 *ibid.* p. 175.

32 *ibid.* p. 177.

33 *ibid.* p. 188.

34 *ibid.* p. 110.