

The Fractal Nature of Human Consciousness,
The Evolution of the "Global Human,"
and
The Driving Forces of History.

by

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ABSTRACT

Using chaos, consciousness and meme theories, developmental psychology and family systems theory, this paper explains the fractal structure of the human race and how, every human activity in each era, is influenced by a dominant set of attractors, $E.C. + P.P.S. = P.E.$ (environmental conditions) + (psychophysiological state) = (physical events). Using these disciplines an analysis of the cultural evolution of the human race and a description of the driving forces of human history are presented. In addition these other insights result:

1. The understanding that the human race, as a whole, is a true dynamical system that follows the principles of chaos theory. And that under the seeming disorderly course of the past 40,000 years of human history there exists an underlying order.
2. This order is the growth process described in developmental psychology, which when extrapolated to global systems is similar to the theory that Phylogeny recapitulates ontogeny, which in turn serves to explain certain aspects of the Bible.
3. That fractal segments express different aspects of the developmental growth of the whole species and that those who follow the underlying order, that applies to them, succeed, while those who fall out of step with it suffer and generally fail.

This thesis is presented in the following way:

1. Background, is provided on similar theories put forward by 19th century anthropologists, by Freud and by other cultures.
2. It is shown how, by combining modern concepts of chaos, memes, consciousness and developmental psychology, one can explain the concepts of the fractal nature of consciousness, the "global human" and the Driving Forces of History. Definitions of terms and descriptions as to how these modern theories have been applied to substantiate the thesis are provided.
3. A brief introduction to four charts which provide a brief, big picture view of the underlying order of the past forty thousand years of human history. Among other things the charts show the dominant attractors of each era, which provide underlying order, and examples of "seemingly "random or disorderly" human activities.
4. Following the charts is a narrative that describes the parallel nature of events in human history and the developmental stages of an individual.
5. To close, benefits of the presented thesis are posited, along with some conjecture as to future mathematical mapping of the evolution and consciousness of the human race.

Aside from the word fractal, the title of this thesis may seem to have little to do with chaos theory, but consider these lines from Chaos, by James Gleik

Chaos breaks across the lines of separate scientific disciplines. Because it is a science of the global nature of systems, Chaos poses problems that defy accepted ways of working in science. It makes strong claims about the universal behavior of complexity. The first chaos theorists, the scientists who set the discipline in motion, shared certain sensibilities. They had an eye for pattern, especially pattern that appeared on different scales at the same time. . . . Believers in Chaos—and they sometimes call themselves believers, or converts, or evangelists—speculate about determinism and free will, about evolution, about the nature of conscious intelligence. They feel that they are turning back a trend in science toward reductionism, the analysis of systems in terms of their constituent parts . . . They believe that they are looking for the whole.

If it is not clear from the title, what this paper is looking for is the whole. The whole reason and meaning, if there is any, of the history of the human race.

There is one thing stronger
than all the armies of the world
and that is an idea
whose time has come.

—Victor Hugo

"The secret of Aikido (and life) is to harmonize ourselves
with the movement of the universe (the marketplace, including nature)
and bring ourselves into accord with creation itself."

—Ueshiba Morihei, founder of Aikido

A journey is a person in itself; no two
are alike, and all plans, safeguards,
policing and coercion are fruitless. We
find after years of struggle, that we do
not take a trip; a trip takes us.

—John Steinbeck

Never prophecy, especially about the future,
but attempt to do all the right things as you go along.

—Mark Twain

Right here, right now the world is waking up from history.
(becoming more conscious/waking up)

— Jesus Jones

It's the end of the world as we know it, and I feel fine

— R.E.M.

THESIS: Presented here is the thesis that the driving forces of human history are attractors which correspond to the stages of the individual developmental growth process, that are included in the recursive equation $E.C + PPS = P.E$. In addition, the evidence seems to show that the cultures that most closely follow the dominant attractors/developmental states of an era dominate that era, while other cultures are pushed aside or totally fall apart. This supports the idea that amid the apparent randomness of human history, there is an underlying order. This paradox is explained by chaos theory, which at its core is a mathematics of nature that can describe systems with both randomness and order.

Though paradoxical, this is a simple concept that only requires a bit of explanation. First one must understand a sub-thesis that the human race is fractal in its nature. I will therefore begin by describing the fractal structure of the human race. With that background I will explain the second part of the thesis title, "The Evolution of the "Global Human." Following that will be a description of attractors and Metaparadigms. This is followed by a review of developmental states, how they are applied to the Global Human concept, and how they act as attractors. Meme theory is then mentioned, to illustrate the importance of cultural evolution. Finally, charts and a narrative provide examples of human activities that express the dominant attractor of the era in which they occurred. In addition to substantiating the main thesis these examples show how their own attractor plus the attractors of the other fractal elements influence fractal segments. For example, all human Paleolithic era activities were a product of an infant state, all human Neolithic era activities were a product of an mother bonded-realized separateness state/attractor combined with the previous infant state/attractor + environmental attractors.

Some may be familiar with a similar hypothesis, the theory that phylogeny recapitulates ontogeny (i.e., the evolutionary development of the species restates the lifecycle of an individual of the species). The thesis presented here is similar to that theory, but by applying chaos theory, fractals, and the "Global Human" concept it differs in significant ways. The Global Human implies that the whole human race can be considered a singular being, the individual people, tribes and cultures, in the species all representing different parts of the total global human's development and experiential memory. I will explain this further in a moment, but first I will provide some background on the previous theory.

The theory that phylogeny recapitulates ontogeny was posed by anthropologists in the 1850's and later by Freud. Previously, other cultures like the Native Americans and the early Greeks had similar ideas. In Ego and Archetype, Edward Edinger offers an example,

there is the Greek myth recorded by Hesiod of the four ages of man. The first, original age was the golden age, a paradise. The second was the silver age, a matriarchal period where men obeyed their mothers. The third was bronze, a period of wars. And the fourth age was the Iron Age, the period at which he was writing which was utterly degenerate. About the golden paradise age, Hesiod says:

(The golden race of men) lived like gods without sorrow of heart remote and free from toil and grief . . .They had all good things . . .They dwelt with ease and peace upon the lands with many good things, rich in flocks and loved by the blessed gods.¹

This myth clearly describes a state of mind where the people are united with the "gods" and their environment. The people were under the influence of the unitive consciousness aspect of the infant state/ attractor where ego consciousness/realization of separateness has not yet occurred. I explain this and the other attractors/states further, in the narrative.

Though plausible, popular culture has not embraced this as an important evolutionary theory. Why? For a number of reasons, the most prevalent being how we are influenced by the dominant attractors of each era, which determine what is popular or unpopular.

Nineteenth century anthropologists had the intellectual development to see the validity of this theory, but because they were under the influence of the attractor of adolescence, which is what "creates" the anthropological mind or urge in the first place, their views were biased by the non-integrated aspect of that developmental state. This reduced the respect for previous states, and lead leading anthropologists of the day to feel justified in believing things like "women were closer to monkeys, than to men. "

Now that we are coming under the "influence" of the mature state attractor, we are able to look at our cultural evolution in a "new way". In maturity, we reintegrate our rational masculine and our intuitive feminine sides, the mind and body and aspects of all previous developmental states. This is what allows us to "perceive" in a new way. These facts, along with chaos theory, (which early anthropologists and Freud did not have available to them) enabled me to substantiate the theory that there is an underlying order to human history, that follows the developmental growth of the "Global Human", i.e. PrO (phylogeny recapitulates ontogeny "chaotically").

PrO does not make sense with linear thinking. PrO only makes sense when one looks at it as the attractors of a chaotic dynamical system. The above mentioned theories can only be applied to a global context with chaos theory, specifically the fractal concept of scaling, and so it is here, with fractals, that I will begin to explain the Fractal Nature of Consciousness, the Evolution of the Global Human and the Driving Forces of History.

DEFINITION OF TERMS IN REFERENCE TO GLOBAL CULTURE

FRACTALS: For those not familiar with fractal geometry, Benoit Mandelbrot coined the phrase in 1975. Fractals are produced using simple, recursive equations where each output becomes the new input for the next iteration. The resulting computer graphics exhibit a curious feature. If a small piece of a fractal is isolated and enlarged, the result often looks strikingly like the original. This is called self-similarity or scaling. The most common examples of fractal structure or fractal geometry are cauliflower and broccoli. Both of these vegetables, the whole head or flower has the same structure as the next smallest branch, and so on down to the smallest branch. The structure, texture and shape, regardless of scale, is the same throughout the whole head.

Now apply this to the human race. The smallest fractal element of the human race is an individual human being, next would be a family, then a community or tribe, then a region, a nation, a hemispheric culture, and finally the largest human fractal element would be the whole human race, to which all are connected. The important thing to remember is that no matter the scale each group has the same psychological structure.

THE "GLOBAL HUMAN": This term implies that individuals, and especially their consciousness, can be considered parts of a whole. Imagine a "global human", which is composed of every living person. During the Paleolithic era, when there were only an estimated 4 million humans on the planet, the "global human" was in its infancy. The infant stage/dominant attractor influenced it, so the limited cognitive intellectual development and unitive consciousness of an infant was common. This confirms the view of human history as constantly improving, having risen out of the ignorance of the Stone Age to ever greater technological and intellectual achievement. This also confirms or substantiates the alternate view that sees human history as a fall out of paradise, paradise being a projection of unitive consciousness. Having globally gone through puberty in the 1500's, we now have the consciousness structure of late adolescence, which is characterized by the individuation process and a fixation on separateness and achievement.

Why don't we have a global monoculture that follows the developmental stages according to a linear model? I'll explain two major reasons. First, consider your own mind. Within it you contain memories of and access to your present and all previous states of consciousness or developmental schemas. In addition, as is pointed out by Robert Ornstein, in his book *The Evolution of Consciousness*, your mind consists of a committee. In terms of the global human, consider all the different cultures of the world as living "memories" of previous states and as committee members in the "mind" of the global human. This is all going on in your head, and in the "mind" of the "global human", but the present state of

consciousness seems to dominate. True to a chaotic system all these parts act as attractors that provide an underlying order while allowing for randomness.

ATTRACTORS: An attractor can be understood as something like the "central gravity force" about which stars in a globular cluster orbit. This central gravity source is not a point, but more like a three-dimensional disk or spiral.

Plotinus expressed an example of an intuitive understanding that attractors shape our lives when he wrote:

The One does not aspire to us, to move around us; we aspire to it, to move around it. . . . We are always around the One. If we were not, we would dissolve and cease to exist. . . . When we look at it, we then attain the end of our desires and find rest. Then it is that, all discord past, we dance an inspired dance around it.
Plotinus, VI, 9, 8 and 9 .²

When looking at human evolution, through the global human concept, and PrO, every human act during each age or era in human history is influenced by one, or a combination of many, of the attractors/developmental states of the growth process of the global human, plus the developmental state of the culture, plus the developmental state of the family, and finally of the individual. This is a critical point. Also, if one is psychologically healthy, memories, when triggered by a similar event in the present, only act as periodic attractors. While when we're present in the moment our present developmental state acts as the dominant attractor. The result is behavior that is similar, but even more unpredictable.

Two concepts of chaos theory explain how this paradox can exist. One is called self-similarity. The second is called ordered unpredictability. Each fractal element of the human race, i.e. individuals, families, cultures, etc. displays self-similarity and ordered unpredictability. Terry Marks provides a good example of self-similarity:

People do tend to resemble themselves in fundamental ways that are independent of spatial, temporal, or situational scales of observation. When individuals possess a certain psychological characteristic, they tend to exhibit that characteristic at many, if not all, levels of existence. An aggressive person demonstrates this trait over and over, whether at the verbal level of hogging air space in a conversation, the behavioral level of pushing to the front of a line, or the tactical level of pushing a colleague aside to get a promotion at work. Each level is a different kind, with its own set of temporal, spatial and situational parameters; each reflects the same underlying tendency.³

Personally, I experienced this concept of self-similarity, which can also be called form-mirroring content, in practicing the martial art of Aikido. How I do a throw, where I stand in relation to another person, or how I grab someone, is particular to me. My psychophysiological state, results from where I am in my individual growth process and the state a recent experience may have created in me, accounts for variations in my "standard" behavior. This works the same way for everything. Activities of any given nation, culture, person, era, etc. are self-similar behaviors, expressing the character of the attractors of that era, nation, culture, person, etc.

This concept of self-similarity is also the first part of ordered unpredictability. Again quoting from Terry Marx, people are,

ordered in that they retain a specific personal or cultural signature, style or identity and continuity over time; they exhibit patterns that can be isolated, identified, and fall within certain delimitable bounds; and finally, their present history can be understood and explained in terms of past history. Yet people are also unpredictable⁴

This is explained by the example of a globular cluster. The orbits of stars are never exactly the same, but they are bounded by knowable parameters. We are similarly bound by the knowable parameters of our developmental states and our environmental conditions. In the short term these allow us to express any possible behavior within the dynamical system, but in the long run the possible and most effective behaviors are limited to the attractors. Like paradigms, attractors also effect how we perceive, but the effect is more pervasive. It would therefore be more appropriate to call attractors, metaparadigms.

Metaparadigms: The dominant state or attractor of each era is what Peter Russell, the author of *The Global Brain* , calls a Metaparadigm, he goes on to say that "Our self model conditions our mental activity, and in this respect may be considered as metaparadigm, similar to a scientific paradigm, but pervading all areas of thinking." **Metaparadigms could be considered psychophysiological attractors, which per the PrO theory correspond to the different developmental stages of the human life span.** Because of this, it is critical that we understand the human organisms developmental process and all of its separate parts.

DEVELOPMENTAL STAGES: THE ATTRACTORS OF HUMAN HISTORY

The study of human development is the study of how and why people change and/or stay the same, over time. In this study the human life span is divided into the infant, mother bonded, father bonded, childhood, adolescent, and mature stages/attractors. Human development is further separated into three domains: the physical domain, the cognitive domain, and the psychosocial domain. These act as sub-attractors to the main attractors/developmental stages. Though they can be studied separately, because they constantly interact and overlap one another no moment of life can be fully understood without considering all domains/attractors simultaneously. This holistic approach is especially critical when using developmental theory to analyze our human evolution.

The physical domain/sub-attractor, concerns itself with changes in size, development of glands, the brain (neural connections), and sense organs, motor skills, nutrition and health. Applied to a global context, the "physical" sub-attractors of the human race include total population, population densities, methods of transport, communication and environmental conditions which all have a large impact on interaction between people.

The cognitive domain/sub-attractor, concerns itself with

the structure and development of the individual's thought processes and the ways in which those processes can affect the person's understanding of, and expectations of, his or her world. . . . Jean Piaget held that there are four major stages of cognitive development. Each one is age-related and has structural features that permit certain types of thinking.⁵

In the first stage, the infant perceives kinesthetically, through their bodies they "absorb" or "feel" their environment. In the second or preoperational stage, the 2-6 year old child uses symbolic thinking, as is reflected in their ability to use language. Children can think of objects independently of their actions on them, however they can not think logically in a consistent way. Most of their thinking is egocentric; i.e. they only understand things from their point of view. In the third stage, 7-11 years, children can begin to think in a consistently logical way, but they can not think abstractly, they only understand literal, "concrete" features. In the fourth stage, adolescents and adults can, in varying degrees, think hypothetically and abstractly, and move in thought from the real to the possible.

Piaget viewed cognitive development as a process following universal patterns. The starting point for this development, according to Piaget, is the need in everyone, for equilibrium, that is, a state of mental balance (Piaget, 1970). What he meant by this is that each person needs to, and continually attempts to, make sense of conflicting experiences and perceptions.

People achieve this equilibrium through mental concepts, or in Piaget's terms, schemas, that strike a harmony between ideas and their experiences. A schema is a general way of thinking about, or interacting with, ideas and objects in the environment.⁶

Applying Piaget's theory to the species, the people in each era are influenced by the schemas/cognitive sub-attractors of that era. As is shown in the charts, the dominant global human development pattern follows Piaget's four stages of cognitive development.

The psychosocial domain/sub-attractor: This domain was created by theories from Sigmund Freud and Erik Erikson, but for this study, Edward Edinger's, work on individuation and relationship between the ego and the Self is more relevant, so I will only go over a few brief points about Freud and Erikson before I go on to Edinger's work.

Freud developed a theory of psychosexual stages to explain how unconscious impulses arise and how they affect behavior during the development of the child. The only relation this theory has to the evolution of the species is that early man was less mental and more in touch with their intuitive body knowledge, which some researchers now define as true knowledge coming directly from one's soul. Erikson identified eight stages, which partially correspond to this study, but not as well as other theories he had, for example:

Erikson's stages are centered, not on a body part, but on each person's relationship to the social environment
. Erikson's theory of psychosocial development describes individuals as being shaped by the interaction of physical characteristics, personal history, and social forces Central to Erikson's theory is his conviction that each culture faces particular challenges and, correspondingly, promotes particular paths of development that are likely to meet those challenges Each society provides better preparation for some crises than for others.⁷

This is because each culture, region or nation is influenced by and expresses a different developmental stage/set of attractors in the life span of the global human.

In addition to these domains/sub-attractors, another major component of individual or species development is the different relationships between ego and self that exist during each stage of life. In fact, these are probably the most influential of all the sub-attractors.

Ego-Self Relationship: For this study the ego and the Self, and their changing roles in the course of the human life span are understood as follows:

The Self is the ordering and unifying center of the total psyche (conscious and unconscious) just as the ego is the center of the conscious personality . . . the ego is the seat of subjective identity while the Self is the seat of objective identity . . . It is generally accepted among analytical psychologists that the task of the first half of life involves ego development with progressive separation between ego and Self; whereas the second half of life requires a surrender or at least a revitalization of the ego as it experiences and relates to the Self first half of life: ego-Self separation; second half of life ego-Self reunion Since there are two autonomous centers of psychic being, the relation between the two centers becomes vitally important.⁸

Within the two major stages are 4 primary phases that can be described as follows:

1. Primary ego-Self identity phase. The ego germ is present, but the ego and Self are one, which means there is no ego.
2. The ego begins to emerge and separate from the Self, but still has its center and is primarily identified with the Self.
3. A residual ego-Self identity still remains, but a person now becomes partially conscious of the difference between ego and Self.
4. An ideal theoretical limit of total conscious recognition of the separate centers of ego and Self and the establishment of a connection between the two. The connection is the ego-Self axis which Edinger calls "the vital connecting link that ensures the integrity of the ego."

The process by which these developmental stages unfold is an alternating cycle As this cycle repeats itself again and again throughout psychic development it brings about a progressive differentiation of the ego and the Self. In the early phases, . . . the cycle is experienced as an alternation between two states of being, namely, inflation and alienation Later a third state appears when the ego-Self axis reaches consciousness which is characterized by a conscious dialectic relationship between ego and Self. This state is individuation The individuation urge promotes a state in which the ego is related to the Self without being identified with it.⁹

How does this play out in a global context? The definitions, roles and relationships of the ego and the Self have a major impact on both the evolution of the human race and the individual human life span. For example:

Understood psychologically, the central aim of all religious practices is to keep the individual (ego) related to the deity (Self). The ego's relation to the Self . . . corresponds very closely to man's relation to his creator as depicted in religious myth. Indeed myth can be seen as a symbolic expression of the ego-Self relationship.¹⁰

The stories from Adam and Eve to Revelations, to changing management theories and the "Do What You Love the Money will Follow" trend are just a few manifestations of this. Many, many other examples exist, and they seem to suggest that we are in the end of the individuation phase, which all points to the fact that the driving forces of history are the same as the developmental states of the individual.

The result of the developmental states of individuals and especially of the global human is different states of consciousness, which evolve throughout life. Carl Rogers found significant changes occurred in his own personality

during his 70s. Growth occurs at every period of development from the first months of life to the last. The obvious contradiction to this is physical or biological growth/evolution. To address this important topic I'll briefly discuss meme theory and the importance of cultural evolution.

MEME THEORY: Talk of evolution usually centers on biological evolution. Is cultural evolution important? At the Saybrook lecture, Dr. Leonard Schlain said that:

. . . . evolution made our brain just big enough so that it could fit through the birth canal, but it was made stunningly incomplete, it was going to lack instincts; what every other animal depends on to survive. So waiting for humans on the other side of the pelvic ring was the rest of the neo natal brain and it was called culture. Which was possible through the development of speech. This bypassed and superseded gene communication and changed how information was exchanged, but it required that we learn in a new way. ¹¹

The exchange of information necessary for evolutionary survival through language is the essence of Meme theory.

Memes are like genes, but are language encoded rather biochemically encoded information packets. Biological evolution has been at a stand still for thousands, if not millions of years. Memetic evolution has superseded genetic evolution. (For more information on meme theory look up meme central on the world wide web.) This is why the cultural evolution explained in the following charts and narrative is so important.

PART 3: INTRODUCTION TO CHARTS AND A NARRATIVE OF EACH ERA

This concludes the definition of terms. Keep these concepts in mind, while reading the charts and narrative, which only include the dominant events. With these the influence of the dominant developmental state/attractor of each era should become apparent. On the top row of the charts are the standard ages Paleolithic, Neolithic, Bronze Age, Iron Age, etc. These are matched with the dominant developmental stages/attractors: infancy, mother bonded, father bonded, childhood, etc. The progression of these states is the underlying order to the seemingly random events of human history.

The reason that many cultures exist in an era is because attractors are not monolithic stages in a linear system. The nature of attractors is that they provide an underlying order and allow for the existence of randomness. A paradox, which when understood may lead us, among other things, to a new understanding of free will and determinism. Also, by illustrating an underlying order in our history this thesis may provide us with a "map" so that we can see where we're going, and this could prove very useful, so keep this in mind as well.

1. THE PALEOLITHIC ERA — BIRTH & INFANCY

This is the first stage of life. Born as an undifferentiated ego mass, the newborn has no rigid sense of self/separateness/ego boundaries. The newborn infant confuses itself with its environment. The first humans similarly had no sense of being separate from their environment. Aboriginal peoples are influenced by a unitive state of consciousness, and therefore experience themselves as one with their environment. As is witnessed by their Dreamtime rituals, theirs is an intuitive knowledge characterized by "magical" thinking or what is termed a direct participation with the environment: participation mystique.

The influence of this attractor provides clear access to intuitive body knowledge, which in some ways surpasses intellectual/mental knowledge. This explains how some ancient beliefs about the structure of the universe were intuited without the intellectual development/"advanced sciences" that we now find are confirming some ancient beliefs.

2. NEOLITHIC ERA: REALIZATION OF SEPARATENESS & BONDING WITH MOTHER

At this stage the infant not only recognizes, but also internalizes a sense of its own being. This separation has a major effect on how the infant perceives and interacts with its world.

In global terms, scholars have termed this separation, which occurred about ten thousand years ago, "The Great Split". It resulted in a shift in consciousness, which is what the story of Adam and Eve symbolizes. This is the act of becoming conscious of self as separate: ego emergence. The loss of unitive consciousness is the result. From that point on they were "out of the garden" and this created duality, and "good and evil".

Horticulture highlighted a distinction between edible and non-edible plants. Newly domesticated animals were labeled tame, being good, and natural, once sacred, became wild and dangerous. The advent of written language, by its very nature reinforced a move to abstract linear masculine thinking and led us away from symbolic holistic feminine thinking. From then on, the feeling of separateness from our environment "mother" earth/God became a dominant part of our "new" consciousness. However, not everyone felt this way. This was only the underlying consciousness or order of the time.

3. THE BRONZE AGE —BONDING WITH FATHER, EARLY CHILDHOOD

The switch from mother bonding to father bonding is the first and most significant event of this age. Further development of self occurs as the child begins to learn the more assertive masculine traits from its father. The male half of our personality begins to be developed during this period. In terms of the Global Human/human history this event has been called the Great Reversal, by scholars such as Joseph Campbell, who found that within a 200 to 300 year period, most of the world's cultures switched from mother or feminine goddess to masculine father god worship. Patriarchal cultures that began to dominate and the Old Testament, with its heavy emphasis on law, judgement and punishment of actions, are just two examples of the influence of the era's dominant father bonding attractor.

4. THE IRON AGE — EARLY CHILDHOOD

The consciousness of this age corresponds to that of early childhood. Piaget discovered that until about age seven, children are "Aristotelians." When asked why an object fell to the floor, Piaget's subjects replied, "because that is where they belong".

In terms of the evolution of the species, the early childhood attractor of the "global human" plus the attractor of the Greek culture, plus their own attractors/developmental state influenced Socrates, Plato and Aristotle. That combination generated the thoughts and actions of those individuals, in that culture in that time in human history.

Due to the influence of the early childhood attractor, they saw their world as alive, filled with intention, as in the above example of gravity, and though it still influenced their worldview, that attractors influence had been waning since the middle of the Bronze Age.

One thing that is certain about the history of Western consciousness, however, is that the world has, since roughly 2,000 BC, been progressively disenchanting, or "disgoddied." Whether animism has any validity or not, there is no doubting its gradual elimination from Western thought. For reasons that remain obscure, two cultures in particular, the Jewish and the Greek, were responsible for the beginnings of this development. Although Judaism did possess a strong Gnostic heritage (the cabala being the only survivor), the official rabbinical (later, Talmudic) tradition was based precisely on the rooting out of animistic beliefs. Yahweh was a jealous God: "Thou shalt have no other gods before me"; and throughout Jewish history, the injunction against totemism—worshipping "graven images"—has been central. The Old Testament is the story of the triumph of monotheism over Astarte, Baal, the golden calf, and the nature gods of neighboring "pagan" peoples. Here we see the first glimmerings of what I have called nonparticipating consciousness: knowledge is acquired by recognizing the distance between nature and ourselves (this is projection of the distancing of ego from Self). . . . The rejection of participating consciousness was the crux of the covenant between the Jews and Yahweh. It was precisely this contract that made the Jews "chosen" and gives them their unique historical mission. The Greek case is less easily summarized. At some point between the lifetime of Homer and that of Plato, a sharp break occurred in Greek epistemology so as to turn it away from original participation and contribute, out of very different motives, to the gradual disappearance of animism. It is difficult to conceive of a mentality that made virtually no distinction between subjective thought processes and what we call external phenomena, but it is likely that down to the time of the Iliad (ca. 900-850 BC) such was the case. The Iliad contains no words for internal states of mind. Given its contextual usage in this work, the Greek word psyche, for example, would have to be translated as "blood." In the Odyssey, however (a century or more later), psyche clearly means "soul." The separation of mind and body, subject and object, is discernable as a historical trend by the sixth century before Christ; and the poetic, or Homeric mentality, in which the individual is immersed in a sea of contradictory experiences and learns about the world through emotional identification with it (original participation), is precisely what Socrates and Plato intended to destroy. ¹²

5. BIRTH OF CHRIST TO THE RENAISSANCE — LATE CHILDHOOD

Late childhood is characterized by a move toward greater individuality/focus on self/identification with ego. In terms of global culture this is paralleled by the introduction of the monotheistic god/which is ego projected. Paradoxically the connection with the Self is reduced, but still plays an active part. It provides the spiritual psychic energy for the deeply religious actions and philosophical debates of this era.

The ability to think in abstractions begins to develop as the child goes through puberty. In global terms this is reflected by a shift from a focus on action to intent. You can now be judged for what you think, whereas before the focus was more on the deed itself. This is reflected by the words of Christ in the Bible.

Christ obviously plays a critical role and is remembered because he, more than anyone else, matched the flow of the dominant attractors of that time. Specifically, he acts as the example of how one is to complete the first stage of life, ego-Self separation/individuation and then make the transition to the second stage, ego-Self reunion/maturity. In fact, when He said "I am the Way," He meant, "you yourself must go through my ordeal." No one else can confront your demons for you; no one else can give you your real Self. But this is jumping ahead to the next two ages.

Throughout the Middle Ages, men and women continued to see the world primarily as a garment they wore rather than a collection of discrete objects they confronted, i.e. the ego was still identified with Self. They also continued to see the world as "magical" and alive, each element filled with meaning and purpose, but less so than in previous eras. In other words, final separation of self and other did not yet take place. This was the project of the next age.

6. CARTESIAN ERA— PUBERTY, ADOLESCENCE & INDIVIDUATION

The primary urge of this age is the will to separate. During adolescence individuals separate from their parents in an effort to define themselves. For the global human's puberty/adolescent phase, this was expressed by the western world, which began this separation in 1492 when Columbus sailed the ocean blue. The significance of this is that:

In pre-Columbus times, "all thought was focused on the East—the Garden of Eden, Jerusalem, the Mecca—they were all to the East of Spain and Rome and everywhere, . . . When Columbus set out to reconquer the Holy Land in the East, he did it by traveling west . . ."So what we have then, is the whole earth reorienting its sacred spot—Jews, Christians, pagans—from East to West.¹³

Symbolically leaving the east is equivalent to leaving home, especially mother/the feminine. For the species the projection of this psychological separation is in fact what caused the separation of man and nature, science and religion, church and state.

Copernicus, continued this psychological separation of man (ego) from his environment (Self) with his "discovery"/new perception that we are not the center of the universe. This is the cause of the "disgoddling" of the world that has occurred since then and the completion of this process was what Nietzsche's phrase "God is Dead" referred to.

Descartes, Bacon and Newton also play a central role in this process, and are remembered along with specific events because they most closely expressed the dominant attractor of this era. Descartes phrase "I think therefore I am" precisely expressed this state of growth in the "global human", especially for western culture. His phrase expressed the total shift from a concrete operational kinesthetic, to a visual abstract way of knowing. This shift is exactly what happens to an individual human child at around the age of 9. At this point all previous ways of knowing are considered unreliable. The only thing that Descartes decided he could "know" was that he existed. This created a need for a new way of knowing and the visually verifiable scientific method, was the result.

Further separation took place when the colonists separated from the paternalistic ways of the Old World. As a "teenager" the U.S. was able to, more or less, define itself by choosing it's own set of values rather than that of its "parents". These new values were then asserted in the Declaration of Independence, the Constitution and the ensuing culture.

Full ego crystallization was further expressed by the go out west individualism of the U.S. and by the philosophical writings of Ann Rand, who valued the individual above all else. By luck or grace, the culture of the United States praised individualism, and was therefore enriched by the immense power and creativity that is the proper result of individuation. The Soviet Union, on the other hand tried to jump from the father dominated childhood stage directly to the community oriented maturity stage. As a result it was not able to take full advantage of the creative energy inherent in individuation.

As the developmental process moved on and the global individuation attractor's influence, reaching its zenith, could no longer be ignored, the old regime fell.

Today major sectors of the U.S. are becoming ineffective as a new attractor becomes more dominant. For example, the once praised hierarchical, boundary laden management structures of IBM and Westinghouse, a projection of fully developed ego boundaries, have resulted in losses. Why? The individuation attractor of the "global human", which has dominated since the 1500's, is being replaced by the next developmental state/attractor.

From the available evidence, the mature state/attractor has been coming into play since the 1920's. This is why, without transformation, old dominant institutions like education, healthcare and government are losing effectiveness. As this attractor comes in, retaining adolescent ways of acting becomes less and less sustainable. The intense focus on the individual becomes a burden because in maturity the individual is seen and must act as part of the whole. This is the result of the already peaked adolescent attractor influencing the world at the same time as the new maturity state attractor comes up. That is also why in so many areas we see a continued faith in reductionism alongside a search for wholeness.

7. THE INTEGRAL INFORMATION AGE — MATURITY/INTEGRATION

This age is titled the Integral age because maturity is the stage when everything is reintegrated. The individual is reoriented from a sole focus on self to a view of self as part of and responsible to the whole. This does not mean a suppression of individuality, but rather the result of maturity is being both an individual and a part of the whole.

In a global context, the separations of man and nature, masculine and feminine, science and religion, employees and management, that took place previously were a result of the projection of ego-Self separation. The second half of life involves ego-Self reunion. The projection of this will promote reunification of parts separated during the first phase.

The things that are being reunited are all around us. In science, quantum theory is reintroducing the observer into the observed. The sixties marked the beginning of reintegration on the level of mass popular culture. Women's suffrage, feminism and eastern spirituality are reintegrating the feminine in what has been a very western, masculine age. Interest in Primal cultures is reintroducing unitive consciousness to modern consciousness. The concepts of boundarylessness and empowered work teams in TQM are eliminating the difference between employees and management. One of the latest efforts to integrate the human side with business efficiency, IQM™ (inner quality management™), of the Heartmath™ system is reintegrating intuitional heart intelligence with brain mind intelligence.

These are but a few examples of the influence of the mature state/attractor. Are these reunions important? It seems that our future well being is dependent on the successful reunion of everything. How so? The perception of separateness, that is a projection of the separation between ego and Self, is in fact the root cause of the breakdown of the environment, education, healthcare, government and the economy.

How we do seems to depend upon how well we reintegrate. For example, not integrated we would use modern technology to only rigidify existing systems. Mature and acting out of reintegrated unitive consciousness we would create organizational systems and use modern technology effectively, and this would set us up to go on to the next stage.

CONCLUSION

The preceding charts and narrative provide a good deal of evidence, and a very provocative collection of examples that seem to substantiate the theory that the evolution of the human race is driven by attractors whose character, and order of influence, match the developmental stages of an individual human, i.e. Phylogeny recapitulates Ontogeny (i.e. the evolutionary development of the species restates the lifecycle of an individual of the species)

What is the benefit of this? The examples show that amid the apparent randomness of the past 40,000 years of human history, there is an underlying order. If you know the order of the attractors that dominate an era you can, in a sense, predict the future. Those people, businesses or nations that most closely align with the dominant attractors will be successful in that era, while those that do not will be pushed aside or fall apart.

In the end, this thesis may provides us with a "global market analysis" or "map" of what we've done, where we are and where we are going. This could enable us to globally jump to something Gregory Bateson called Learning III. This would be a higher level of awareness that would give us a flexibility and understanding of the meaning of our lives, never before attained, and raise our effectiveness, and standard of living/level of happiness.

On an abstract level, this thesis is leading me to a mapping of the evolution of consciousness through the life of fractal segments on chaos based wave diagrams, with the proportions of the golden mean. This might eventually lead to a mathematics of consciousness and possibly a new number theory, the significance of which was intuited by Carl Jung when he wrote, "We can define number psychologically as an archetype of order which has become conscious." This may seem abstract, but if this thesis shows anything, it shows that every single human action and thought is a product of consciousness. And this confirms one physicist's understanding of one of the world religions' core beliefs about the nature of reality: As above so below, i.e.. Form mirrors content. So if this leads us to understand consciousness itself, this thesis may show us more than the underlying order of human evolution, it may very well help unlock the mysteries of the nature of our existence.

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