A QUANTUM MODEL OF HUMAN BEINGS IN POSTMODERN SOCIOLOGY

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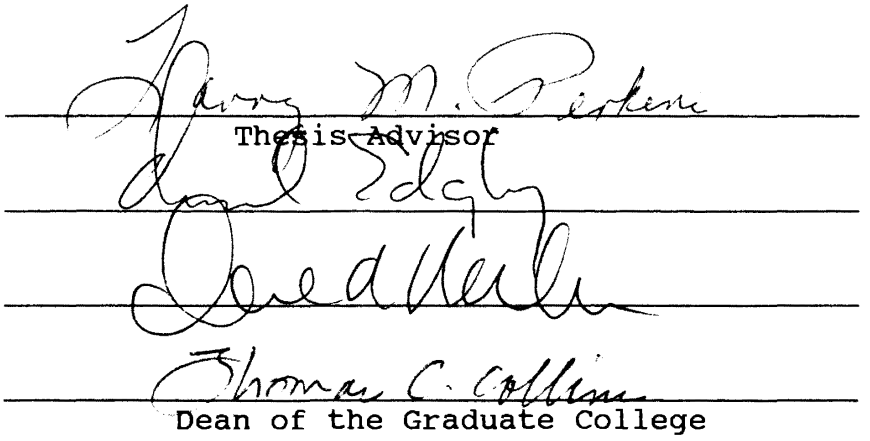

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So you see the whole key to liberation is magic. Anarchism remains tied to politics; and remains a form of death like all other politics, until it breaks free from the defined "reality" of capitalist society and creates its own reality...Reality is thermoplastic, not thermosetting, you know: I mean you can reprogram it much more than people realize. The hex hoax - original sin, logical positivism, those restriction and constriction myths - all that's based on a thermosetting reality. Christ man, there are limits, of course, nobody is nutty enough to deny <u>that</u> - but the limits are nowhere near as rigid as we've been taught to believe. It's much closer to the truth to say that there are no practical limits at all and reality is whatever people decide to make it. But we've been on one restriction kick after another for a couple thousand years now, the world's longest head-trip, and it takes real negative entropy to shake up the foundations.

Simon Moon, in <u>The Illuminatus!</u>, Wilson, pp. 112-13.

CHAPTER I

INTRODUCTION

> Epistemology and ontology; knowing and being, come to have, in the post-modern version of social theory, an interactivity that is not found in premodern or modern worldviews and knowledge processes. It is that interactivity that means that all truth statements are, in part, constructed by the people who are the subject of the truth statement.
>
> from Chaos and Symbolic Interactional Theory
> "The Poetics of Human Knowledge",
> T. R. Young, 1990

> Modern physics has confirmed most dramatically one of the basic ideas of Eastern mysticism; that all the concepts we use to describe nature are limited, that they are not features of reality, as we tend to believe, but creations of the mind; parts of the map, not of the territory.
>
> from The Tao of Physics, Fritjof Capra, p. 147.

Looking closeley at Twentieth Century reality can be a somewhat disturbing experience. One has only to turn on the evening news to see evidence of widespread upheavals in global systems. As Bruce Lockerbie says in The Cosmic Center "Forty years ago, half the globe was still remote from us; its accomplishments and its atrocities were at least delayed from our hearing. Today we live in a shrunken world, a universe squeezed into a ball by the marvels of technology" (Lockerbie, p. 13, 1977). We are more informed - faster and more efficiently - of events going on around the globe. It

is easier in the late twentieth century to view the entire earth as a whole and to follow trends and patterns emerging in global political, economic, and ecological systems. We are beginning to see the interconnectedness among all of these systems.

The "shrinking of the world" also invites sociologists to see all humans, regardless of skin color or ethnic background or nationality, as one species. Twentieth Century humans seem to many on the verge of a psychological breakdown.

> The pace of modern living is so accelerated and we have such easy access to so much bad news, we find ourselves participating daily, as vicarious observers, in unending cycles of catastrophe, holocaust, and human folly. They would leave us suffocated by grief if we did not defend ourselves; so we adopt a veneer of cynicism to maintain our sanity (Lockerbie, p. 14, 1977).

To deal effectively with the issues facing our species and our planet, we must do more than adopt a veneer of cynicism. Why is man so alienated from himself and from other beings? Why do we continue to pollute the planet and wantonly squander resources and destroy wildlife? Why do we keep ideological and economic systems that encourage the development of "cheerful robots" (Mills, 1959). Dealing effectively with these issues means understanding our past and the nature of human consciousness.

In recent decades, many people have put forth the idea that the way human beings collectively define reality

influences the way they interact with the physical environment. Carolyn Merchant in The Death of Nature traces history from an "organic" metaphor to a "mechanical" metaphor and supports her presentation with examples of how nature was and is perceived from within each of these metaphors, and the different technologies each metaphor generates. Thomas Kuhn calls the collective definition of reality a "paradigm" (Kuhn, 1962). More specifically, Kuhn describes "paradigm" in the context of the scientific community.

According to Kuhn, the "paradigm" defines what is to be considered "data" and what is "just noise". An example of this can be seen in the 16th century Leyden jar experiment. The scientists of the time, Benjamin Franklin among them, conceived electricity as being a "fluid" or an "atmosphere". The Leyden jar was devised to prove the existence of this fluid or atmosphere and did in the fact that it acted as a condensor or a conductor for electricity. But there were certain anomalies which were later explained by the electrical properties of glass which eventually overthrew the fluid or atmosphere theory of electricity, which at the time were dismissed as "just noise". They were looking for electrical fluid and they found it, at least at first. Therefore, the paradigm influences hypothesis formation, methods, and results in scientific research.

It can be shown the scientific community itself is

operating under broader historical paradigms, or as we shall see in the first chapter, "myths" about what we believe "reality" to be like. And as Kuhn and others maintain there can be no purely "objective" viewpoint in science, it will be maintained throughout this work that there can be no purely "objective" collective definition of reality either. The cost to human psychological well-being and the physical environment is too great. As explained by Fritjof Capra in The Tao of Physics:

> In modern physics, the question of consciousness has arisen in connection with the observation of atomic phenomena. Quantum theory has made it clear that these phenomena can be understood only as links in a chain of processes, the end of which lies in the consciousness of the human observer. In the words of Eugene Wigner, "It was not possible to formulate the laws of (quantum theory) in a fully consistent way without reference to consciousness". The pragmatic formulation of quantum theory used by the scientists in their work does not refer to their consciousness explicitly. Wigner and other physicists have argued, however, that the explicit inclusion of human consciousness may be an essential aspect of future theories of matter (Capra, p. 291, 1971).

This inclusion involves radically different notions of the role of consciousness and its relationship to the physical environment than those of the previous worldview based on the duality of mind and matter, and the "world is a machine" metaphor. The shift from "subjective" (Jaynes, 1976, Wilbur, 1979.1981), more organic metaphors was gradual; it will be shown in this work this gradual shift corresponds with the evolution of human consciousness. We are at an interesting point in human history. As consciousness evolved

from subjective to objective, and human world views reflect the shift, we find that our objective knowledge brings us back to a new higher order subjectivity; not a regressive escape into subconscious undifferentiation, but an awareness of the unbroken unity of consciousness which transcends the objective personal ego. Quantum theory has brought physics, traditionally the hardest of the "hard sciences", back to ancient esoteric mysticism, Taoism, and the like.

This coming full circle, in a sense, leaves the human species with an existential choice; the choice of the kind of relationship one has with the world. Quantum theory and its striking resemblance to ancient knowledge systems will be discussed. This discussion will be combined with postmodern sociology and used to support the proposal of a new paradigm. The common thread in ancient knowledge systems, quantum theory and postmodern sociology is the creative nature of human consciousness. As the physicist David Bohm says in Wholeness and the Implicate Order:

> To meet the challenge before us our notions of cosmology and of the general nature of reality must have room in them to permit a consistent account of consciousness. Vice versa, our notions of consciousness must have room in them to understand what it means for its contents to be 'reality as a whole'. The two sets of notions together should then be such as to allow for an understanding of how reality and consciousness are related (Bohm, p. x, 1983).

Sociologically, the implications of this relationship of

consciousness to reality is of critical importance. Throughout man's history on this planet the structures different societies have labelled "real" or "reality" have encompassed many diverse world views, each presenting various ideas about the nature of the universe and man's place in it; and these ideas have always been reflected in the way these peoples have defined and approached their immediate physical environment. Theoretically, the discussion presented in this work is aligned with the post-modern sociological project, which is,

> ...to emphasize the human authorship of both reality and theories of reality. It is (this) very interactivity between object of knowledge and subject of knowing that means that science, religion, and sociology are but different aspects of the same reality process (Young, p.16, 1992).

Contemporary society has been described as "necrophilic" (Fromm, 1978), a "culture of the death instinct" (N. Brown, 1959), part of a "sick age" (Buber, 1958). All such theories in some way lead from a primal experience of unity, which was the sacred verge of self-consciousness, to a "rationalization of the sacred" (O'Keefe,1982), a "proliferation of the It-world" (Buber,1958), an increase of objectivity in a secularized, mechanized view of the universe. Whereas it was man's ability to be objective that led him out of primal undifferentiation and into "the deep well of himself" (O'Keefe, p. 39), and has allowed him to dominate the planet - when objectivity is taken too far we begin to see

widespread ecological damage and individual and social alienation. It is only by analyzing what we now know of man's cultural history we can begin to see in it its analogy with the evolution of human consciousness. It will be shown how the evolution of consciousness became with homo sapien, "the symbol-user" (Fromm, Jung, Mead, Jaynes, O'Keefe) a drama projected "outward".

Understanding what role the collective consciousness of the human species has had in shaping the world around us brings one to an awareness in accordance with postmodern physics; this is <u>not</u> a deterministic, mechanistic universe in which we are but passive spectators unless we <u>choose</u> to make it one.

We are out of balance with the earth, with ourselves, and with other human beings because of the way have "framed" (Husserl) reality. The way we frame reality influences how we interpret and interact with the physical world and other beings in it. Later chapters discuss the evolution of human consciousness and show the way we have framed reality in the past and present is a direct reflection of this evolution. Our evolutionary history shows a pattern from the emergence of a collective type of self consciousness from a previous undifferentiated state, through highly specialized nervous systems the eventual emergence of individual, atomized "egos". The history of the evolution of human world views

reflects this evolution of consciousness in an analogous fashion. Since, as Julian Jaynes says, "...the metaphors of mind are the world it perceives", our historical treatment of the physical environment and non-human life also reflects this evolution of consciousness. The "logical objective frame of reference of the paramount reality", is a protection of the ego against uncertainty, the supernatural, and most of all, a repression of the biological fact of death, and is a direct reflection of the emergence and establishment of the ego. This work shows phenomenologically the evolution of consciousness and the effects of consciousness on the physical environment in each stage.

I believe the postmodern world is in critical need of a new paradigm. I also believe sociological theory can be a major influence in contributing to a "paradigm shift". The beginnings of sociology were rooted in reactions to the Enlightenment, in the "logical positivism" of Auguste Comte (Ritzer). Up until this point in sociology, I feel major theorists have presented some very valid descriptions of society and human beings <u>from within their historical paradigm,</u> which was, of course, a reflection of how far the collective human consciousness had evolved at that point.

For example, during Comte's time, the 19th Century, society was essentially chaotic; the French Revolution created anarchy and the Industrial Revolution was beginning.

Society as a whole, as well perhaps as Comte himself, needed reassurance at that point in history that the universe was an orderly place. As will be presented in the succeeding chapters, human beings needing reassurance at this point in history is consistent with the evolution of consciousness.

Sociology is to me the study of the human species. This includes studying their behavior, their cultures, their ideologies. Sociology also seems to involve existential questions and attempts at understanding our world. The postmodern era is unique in the sense of having science and mysticism coming full circle. For, as Gary Zukav says in The Dancing Wu Li Masters:

> This is not only different from the way that we have looked at the world for three hundred years, it is opposite. The distinction between the "in here" and "out there", upon which science was founded, is becoming blurred. This is a puzzling state of affairs. Scientists, using the "in here-out there" distinction, have discovered that the "in here-out there" distinction may not exist! What is "out there" apparently depends, in a rigorous mathematical sense as well as a philosophical one, upon what is "in here" (Zukav, p. 92).

If I can succeed in this work in showing the creative nature of human consciousness in shaping physical reality, then we are faced with the responsibility of what we've created around us. And whether we exercise it or not, we are also faced with the responsibility of re-creating it. If we continue, once the knowledge of the relationship of consciousness and reality is widely known, we will be acting, as Jean Paul Sartre would say, in "bad faith". I want to

prove here that we do have a choice about the world we live in. To sum up, I offer as a sort of "rationale" for this work a quote from The Tao of Physics:

> In mysticism, knowledge cannot be separated from a certain way of life which becomes its living manifestation. To acquire mystical knowledge means to undergo a transformation; one could even say that the knowledge is the transformation. Scientific knowledge, on the other hand, can often stay abstract and theoretical. Thus most of today's physicists do not seem to realize the philosophical, cultural, and spiritual implications of their theories. Many of them actively support a society which is still based on the mechanistic fragmented world view, without seeing that science points beyond such a view, toward a oneness of the universe which includes not only our natural environment but also our fellow human beings. I believe that the world view implied by (post)modern physics is inconsistent with our present society, which does not reflect the harmonious interrelatedness we observe in nature. To achieve such a state of dynamic balance, a radically different social and economic structure will be needed: a cultural revolution in the true sense of the word. The survival of our whole civilization may depend on whether we can bring about such a change. It will depend, ultimately, on our ability to adopt some of the yin attitudes of Eastern mysticism: to experience the wholeness of nature and the art of living with it in harmony (Capra, p. 297).

CHAPTER II

SCIENCE AND MYTH IN THE POSTMODERN WORLDVIEW

> There is surely no conflict between science rightly defined and myth also rightly understood. Heisenberg, Einstein, Niels Bohr, and countless other great modern scientists have made that clear. (May, 1991).

To most people in the late 20th Century, "science" and "myth" mean very different things. For some, myths are those wildly unsophisticated beliefs of the ancient Greeks, "fairy tales" about gods and goddesses who controlled the forces of nature and the fates and destinies of men. To others, all religions are myths, the Judeo-Christian version being no less a myth or fairy tale than others. In contemporary Western society, the scientific myth which gained prominence in the Enlightenment and the Scientific Revolution of the 17th, 18th and 19th Centuries is so deeply ingrained that in most people's everyday lives, the only things considered "real" are those things that can be seen, heard, tasted, touched, smelled, or in some way measured. What most people don't understand is modern science is another myth. Rollo May defines myth this way:

> A myth is a way of making sense in a senseless world. Myths are narrative patterns that give significance to our existence...Myths are like the beams of a house: not exposed to outside view, they are the structure which holds the house together so people can live in it (May, 1991).

The reality based world of most people in industrialized nations is tied to the metaphysics, philosophy, and science which gained dominance in the ideas of the Enlightenment and the Scientific Revolution. This worldview (Schutz), or paradigm (Kuhn), or belief system (Wilson), or myth (May), has at root certain assumptions about concepts such as "truth" and "reality".

The knowledge of the world can be seen as being based on certain assumptions, and whatever the dominant worldview, underlying it are concepts about the meaning and the structure of the universe. Julienne Ford discusses the concept of "Truth" (endnote 1). The version of "Truth" we are concerned with here is defined by Ford as Truth 1:

> Truth 1 - metaphysical truth. Must be accepted at face value. Represents the ultimate benchmark against which <u>everything else</u> is tested, for if there were something more fundamental against which a test might be made, then that would become the basic belief. (from Lincoln and Guba, <u>Naturalistic Inquiry</u> p. 14).

"Truth 1" can be called myth, religion, philosophy, metaphysics, science. The only change is in methods of perception. Postmodern views of science and sociology show these methods of perceiving intimately related to the values and meanings held about the world and human existence. In other words, all truth 1 statements are human constructs. Quantum physics and postmodern sociology show us an "objective" truth does not in "actuality" exist apart from the perception of it: The truth "actualizes", the truth

exists in a relationship between knowing and being -between epistemology and ontology.

Understanding the current issues and calamities facing the human species in the postmodern era involves adopting a radically different notion of the role of human consciousness and its relationship to the physical environment. This understanding involves reexamining the myths used to order human existence. The now-dominant world-view with its basic axioms of a duality of mind and matter and the underlying metaphor, or "myth", the "world is a machine" is no longer able to deal theoretically with empirical scientific evidence, as we will see in the next chapter. This work presents a quantum model of human beings which lends support to the evidence of postmodern science and postmodern sociology. The quantum model of human beings demonstrates how consciousness and reality are related. The myths created by human consciousness literally become the "reality" experienced (Jung, 1968).

Our definitions of the world are functions of our nervous systems' and our evolving consciousness'. We see the world this way in the first instance because of the physical evolution which has come before us, because of the way our nervous systems' are organized. For example, the human eye can perceive only a fraction of the frequencies in the spectrum of light, what is commonly called the visible

spectrum. This neurological/genetic base, then, allows for the emergence of "mind" through the use of symbols; and human beings have inquisitive minds. The first myths were creation myths giving human beings explanations as to why the world appeared as it was; why the wind blew, why there was lightning.

For humankind the world has always been ordered into narrative patterns that give significance to our existence...myths. Each of these myths have base assumptions about the universe, about the epistemology and ontology of the physical world. There are also existential implications of each of these myths. The dominant world-views of the species reflect the evolution of human consciousness. This is what Bohm means in the quote in the introduction when he stresses the need to have an understanding of what it means for the contents of our consciousness to be "reality as a whole". Postmodern science shows us "truth 1", the basic truth, is and cannot help but be a human construction based on human perceptions. Perceptions have changed because consciousness has changed. As consciousness changes and evolves, acting on the world changes and in truth, physical reality changes. Postmodern science and sociology stress the mythical aspect of all human world views. Myths are the context within which human beings act, defining what we believe the universe to be like and what our place is in it.

Dubois states;

> We know little of final truths. What we can know is by nature existential. We are living. We are dying. We stand on the earth. And our imagination reaches to the stars (p. xx, 1987).

At a certain point, (the subatomic realm) our reason comes up once again to awesome mystery. With human reason we can never get to an "objective truth", we can only know the universe through our human consciousness. Therefore all world-views, all ideas of "truth 1", are subjective and emmeshed with values. Every "truth 1" consists of myths.

There is usually a distinction drawn between premodern paradigms and modern science. To the modern mind, premodern paradigms are seen as "magical" (O'Keefe, 1982) pre-scientific (and therefore less valid), superstitious, or merely religion or myth. The taken-for-granted reality of the modern technological society, though, is not a purely objective, self-evident Truth, but has metaphysical assumptions about ontology and epistemology at its very foundation. In the postmodern intellectual environment, science itself becomes indistinguishable from other myths used to give meaning and order to the cosmos.

This study is an historical analysis of the concept of "truth 1" as defined by Ford above. This "truth 1" is going to be called in this work "science" and will be analyzed in terms of "premodern", "modern", and "postmodern" eras. It will be shown that all of these versions of "truth 1" are

myths according to May's definition. The difference between the myths of science and the myths of the Greeks, American Indians, African tribesmen, Jews, Christians, etc., is in the latter myths, the premodern era, the forces of nature are personified as gods and goddesses and are in many ways parental-type figures for humankind in a vast, mysterious world. In the same way children engage in "magical thinking" before they learn the positivistic western worldview, premodern myths reflect the time when human consciousness was not yet separated from its environment. Consequently the environment is infused with conscious "entities" (Jaynes, 1976, Wilbur, 1981). The forces of nature, the nature of "reality", the myths that held the house together, were expressed in what can be called a "subjective" context (Wilbur, 1981).

"Science" was associated with religion and philosophy, and its methods were based on these religious and philosophical assumptions. Aristotelian mechanics is based on a "common sense" <u>experience</u> and is therefore considered "subjective". The earliest "scientists" passively watched natures's processes and commented on them. These scientists believed it was unwise to interfere with nature's process. In this period the knowledge process was concerned mainly with naming and categorizing the physical world (Wilbur, 1981). At this period in the evolution of consciousness, and

force -is a myth. Postmodern philosophy, science and sociology are in agreement in stressing when you get to the deepest level, the furthest out, we find that we are brought back to ourselves and our creations. As we will see in the next chapter, human beings cannot get away from the fact that as they believe, so they act; and in their acting, they create reality. In the past, our ideologies have evolved as our consciousness' have evolved. Human reality is always a tautological proposition: it is as we see it and say it is, almost without limit, the only true limit being consensus.

The world the majority of people in western society live in, the reality they experience on a day to day basis is based in the first and most basic sense on our nervous systems and then later on the metaphysics and philosophy and science that gained dominance in the ideas of The Enlightenment and the Scientific Revolution.

The Scientific Revolution and the emphasis placed on apprehending truth by empirical evidence is the myth that there is an "objective" reality completely separate from the human observer. Empirical evidence, at its most fundamental level, is biased by our very nervous systems, from which emerged the higher order focusing of "self" consciousness and the ability to symbolically represent the physical world and by manipulating those symbols, manipulate physical reality. Our so-called "objectivity" has never been more than the most

fundamental kind of subjectivity.

As stated earlier, the present work is an historical analysis of "truth 1"; a term that for the sake of convenience will be traced under a single concept - what will be called "science". This analysis shows that the truth 1 structure of a given historical period corresponds phenomenologically to the evolution of human consciousness. Although there are many terms that could be used, as stated earlier I will categorize human knowledge into three basic eras under science; the premodern, the modern and the postmodern. The premodern era is characterized by having a supernatural air, it was dominated primarily by religious/magical world views (O'Keefe, 1982). The premodern era contains the emergence of "self" consciousness in the human species, and most of the knowledge of this period consists of naming and categorizing features of the "external" world (Wilbur, 1981). The archaeological record shows abundant evidence to support the thesis of "self" consciousness or "ego" emerging out of an initial undifferentiated state in the human species (Brown, 1959, Jaynes, 1976):

> Dawn Man, in other words, began his career <u>immersed</u> in the subconscious realms of nature and body, of vegetable and animal, and initially "experienced" himself as indistinguishable from the world that had already evolved to that point. Man's world - nature, matter, vegetable life and animal (mammalian) body - and man's <u>self</u> - the newly evolving center of his experience - were basically <u>undifferentiated,</u> embedded, fused and confused (Wilbur, p.

22, 1981).

This era contains substages which are explained in greater detail later, and it lasts until the time that the "mind ego" (Wilbur, 1981)) has totally separated from not only the "outer" physical environment but also separated completely from the "body ego" (Wilbur, 1981), epitomized in the work of Descartes at the beginning of the modern era.

The modern era began for the most part with the Enlightenment and the Scientific Revolution and can be discussed in terms of the Newtonian view of the universe. In the Newtonian universe, all of the "consciousness" which used to infuse the physical environment to varying degrees in the premodern era is now confined to a small "space" inside (actually, in the head area, with the body seemingly "dangling below" (Wilbur, p. 7, 1979) the individual. Incidently, this is also the Victorian era, where sex and bodily functions became "evil", an age built on the works and preachings of Luther (Brown, 1959).

After the naming and categorizing of the physical environment which began with self consciousness in the premodern era, the seemingly solid, "objectified" "mental ego" began to abstract relationships above the previous levels, began to derive "laws" for relational events in the physical world. This is the age of reason and the age in which the "world is an organism" metaphor was replaced with

the "world is a machine" metaphor.

> It is inconceivable that inanimate brute matter should, without the mediation of something else which is not material, operate upon affect other matter without mutual contact, as it must be if gravitation,..., be essential and inherent in it...That gravity should be innate, inherent, and essential to matter, so that one body may act upon another at a distance through a <u>vacuum,</u> without the mediation of anything else, by and through which their action and force may be conveyed from one to another, is to me so great an absurdity that I believe no man who has in philosophical matters a competent faculty of thinking can ever fall into it. Gravity must be caused by an agent acting constantly according to certain laws, but whether this agent be material or immaterial I have left to the consideration of my readers (Isaac Newton, letter to Richard Bentley, February 25, 1692-3).

These metaphors, "the world is an organism" and "the world is a machine" are both myths in May's sense of the word. Each is a reflection of the evolution of consciousness of the species. The "mood" of historical epochs, as seen in the "myths", the "truth 1" structures reflected in their cultures, can be seen phenomenologically to mirror the cosmic evolution of consciousness (Regardie, 1989, Wilbur, 1981).

The postmodern era will be seen as the era of the Einsteinian view of the universe, where ideas of cultural, historical, and psychological (neurological) relativity become the predominant models in natural and social scientific theory. The postmodern insight is supported by various disciplines, including physics, as will be shown in the next chapter. The crucial insight of the postmodern worldview is that <u>there is no</u> "objective" truth 1 structure for all time "out there"; external reality is shaped by our

definition and interaction of/with it. In understanding this we can take steps to avoid the common error of modern thinking, in which we, at any given historical time, assume our beliefs are based on an objective "truth", and therefore separate from us and true for all time. The consequence of this error is we then believe our belief system is the only valid way of seeing things, all others do not even merit consideration. We see the "truth" in a way as standing still, and ourselves as coming closer and closer to it and allowing only one path, the path of reason and rationality; the path of science. Robert Anton Wilson, in the introduction to The Eye in the Triangle captures the mood of the postmodern insight:

> The major discovery of our age is Relativity; that is why the general public, with intuitive accuracy, always classifies Einstein as the archetype of modern genius. But at the same time Albert was formulating the mathematics of Special and General Relativity, the same principle was - synchronistically and inevitably - being discovered/created in a dozen fields. Anthropologists were beginning to recognize cultural relativism, which was a kind of Copernican Revolution of the sensibility, as it became clear that the typical reality-tunnel of Western Christian Civilization was not the only valid way to sense the Universe around us...
>
> Freud and Jung, were, at the same time, discovering psychological relativism, or, as I prefer to call it, neurological relativism. What any person sees in a room full of people is not just "what is really there" (which is known only to Bishop Berkeley's God) but also what that person's conditioning and complexes bring into the room as a filter. We are all galaxies shouting to each other over vast interstellar distances of prejudice; it is a minor miracle that we are able to understand each other even approximately. Korzybski and the General Semaniticists, Garfinkle and the Ethnomethodologists, and all

> psychologists working in perception theory, have made this variety of relativism even more obvious than it was to Freud and Jung (Wilson, p. xi, Regardie, 1989).

This chapter lays the foundation to an ethnomethodological view of knowledge systems, where the deeply ingrained epistemological and ontological assumptions of the modern worldview are "bracketed"; taken off the pedestal of "objective truth". In this way the current epoch of modern science can take its place in the evolution of consciousness as a stage; a stage no more or less valid than the premodern, or, as proposed throughout this work, the postmodern. As will be seen, there are definite psychological reasons for the human resistance to transcending the secure limitations of the modern worldview. But as we shall see, our own scientific worldview in quantum physics, as well as the crises in the psychological and physical environment we've created, are urging this further step in the evolution of consciousness; the transcendence of the "mental ego", and the reconnection in "superconscious" (Wilbur, 1979) awareness of "inner/outer", "matter/energy", "mind/body".

The scientific myth of the modern era is a reflection of human "self" consciousness creating a predictable, "lawlike", safe environment for itself; just as the premodern myths are reflections of the undifferentiated state of consciousness

immediately preceding the first emergence of the self and the struggle of that separate emerging self-sense to maintain its separation in a new symbolic environment (Jaynes, 1976, Wilbur, 1979, 1981). As we shall see in the remainder of this work, there are several major barriers to the transcending of the scientific myth of the modern era; the largest being the "mind ego's" fear of dissolution, death; which perpetuates the fragmented experience of objective reality, based in the first instance on the continual and vigilant maintenance of an "in here/out there" or "self/not self" boundary (Wilbur).

endnotes

(1) The concept of truth is an elusive one. Julienne Ford, in her delightfully whimsical book, Paradigms and Fairy Tales 1975), asserts that the term truth may have four different meanings, which she symbolizes as Truth 1, Truth 2, Truth 3 and Truth 4:

Truth 4: is the familiar empirical truth of the scientist; a claim in the form of hypothesis or predicate (an affirmation or denial of something) is Truth 4 if it is consistent with "nature" (or, in Ford's own language, "preserves the appearances").

Truth 3: is logical truth; a claim (hypothesis or predicate) is Truth 3 if it is logically or mathematically consistent with some other claim known to be true (in the Truth 3 sense) or ultimately with some basic belief taken to be Truth 1 (to which we shall return in a moment).

Truth 2: is ethical truth; a claim is Truth 2 if the person who asserts it is acting in conformity with moral or professional standards of conduct.

Truth 1: is metaphysical truth. Unlike the case of a claim's being Truth 2,3,or 4, a claim that is said to be Truth 1 cannot be tested for truthfulness against some external norm such as correspondence with nature, logical deductibility, or professional standards of conduct. Metaphysical beliefs must be accepted at face value; as Aristotle knew (Reese, 1980, p. 70) and Ford affirms, basic beliefs can never be proven Truth 4 - in conformity with nature - or False. They represent the ultimate benchmarks against which everything else is tested, for if there were something more fundamental against which a test might be made, then that more fundamental entity would become the basic belief whose truth (Truth 1) must be taken for granted.

All of the above taken from A Naturalistic Inquiry, Lincoln and Guba, p. 14-15).

CHAPTER III

A QUANTUM VIEW OF CONSCIOUSNESS AND MATTER IN POSTMODERN PHYSICS

> Until the discovery of modern quantum theory in this century, the physical universe and our thoughts about the physical universe were thought to be totally separate. Quantum physics shows us that what we visualize is what we see. In other words, our thoughts about the world and the way the world appears are fundamentally related. (Toben and Wolf, Space-Time and Beyond. p. 126, 1983).

> Quantum mechanics is the theory of physics. It has explained successfully everything from subatomic particles to stellar phenomena. There never has been a more successful theory. It has no competition (Zukav, The Dancing Wu Li Masters p. 198, 1979).

The word physics comes from the Greek word "physis" which originally meant the endeavor to see the essential nature of all things (Capra, p. 6, 1971). This mission of physics is essentially no different than the function of May's myths and Ford's concept of "truth 1". This mission is the basis of every myth or cosmology or religion in human history. As mentioned in the introduction, in the premodern era, physics - science - could not be separated from philosophy and religion (Capra p.6, 1971). The modern period begins to show a marked change taking place in which the myth known as "science" gains dominance. In the modern era, the underlying myth for the meaning and structure of the universe shifted from a subjective metaphor, the "world is an organism" with its accompanying mythologies, to an objective

metaphor, "the world is a machine". The premodern era is seen as being subjective because the dominant versions of "truth 1", the dominant myths, see the cosmos in terms of anthropomorphized forces - gods - personifications of the earth, of nature, of the objects in the heavens. Human knowledge was concerned with observing the physical world passively. The premodern "scientist" predominantly held only by unintrusively observing Nature's Process could knowledge of "physis" be found. The distinction can best be seen in the methodology practiced in the two eras. Premodern scientists predominantly operated under a "truth 1" structure that was animistic, organic, vitalistic. The premodern science of alchemy compared the cosmos to the human body - uniting the macrocosm and microcosm with the motto, "as above, so below".

In the "world is a machine" metaphor under which modern science operates, human beings are observers in a universe of matter in clocklike motion. In the scientific myth of the modern era there is a sharp distinction between what is living and what is not living. Objects in the physical world move according to "natural laws", forces such as gravity:

> The effect of Cartesian dualism...was to excise every trace of the psychic from material natue with surgical precision, leaving it a lifeless field knowing only brute blows of inert chunks of matter. It was a conception of nature startling in its bleakness - but admirably contrived for the purposes of modern science. Only a few followed the full rigor of the Cartesian metaphysic, but virtually every scientist of importance in the second half

> of the century accepted as beyond question the dualism of body and spirit. The physical nature of modern science had been born (Westfall, p. 31, 1979).

The modern era is based on the Newtonian view of the universe in which there are concepts such as "absolute rest", "absolute time", and "absolute truth". It was thought the human observer could observe physical phenomena without influencing them in any way. This is the basis of the concept of objectivity.

The idea of objectivity requires a separation of subject and object. It involves the idea of the human observer being separate from the environment s/he is observing. Embedded in this idea is the ontology which sees "consciousness" confined to "inside" the human observer who observes objects and events "outside" and unconnected from him/herself. It was not that human beings became "scientific" and therefore less guided by myths in the modern era. What happened is the dominant method of perceiving the world changed. The ways of acting and being in the world changed. Both eras stress empirical evidence. But premodern physicists saw the cosmos as something alive, organic, and stressed <u>experiential</u> empirical evidence. The modern physicists saw the universe as something inanimate and mechanical and stressed the experimental empirical evidence; <u>measurement.</u>

In the modern era successes in physical science in areas such as astronomy, biology, chemistry and technology sparked

the Enlightenment, the Scientific Revolution, and the Industrial Revolution. In the modern era the ideas of truth 1 expressed in organic myths in the premodern era were overshadowed by the scientific myth based on the mechanistic metaphor for the universe:

> The removal of animistic, organic assumptions about the cosmos contributed to the death of nature - the most far-reaching effect of the scientific revolution...as a conceptual framework, the mechanical order had associated with it a framework of values based on power, fully compatible with the direction taken by commercial capitalism (Merchant, p. 193, 1988).

The Animus Mundi of the premodern era was replaced with the Machine Mundi of the modern era. The basic assumptions about reality in the modern era as shown by Merchant include:

1. Matter is composed of particles (The ontological assumption).
2. The universe is a natural order (The principle of identity).
3. Knowledge and information can be abstracted from the natural world (The assumption of context independence).
4. Problems can be analyzed into parts that can be manipulated by mathematics (The methodological assumption).
5. Sense data are discrete (The epistemological assumption).

> Based on these five assumptions about the nature of reality, science since the 17th Century has been widely considered to be objective, value-free, context-free knowledge of the external world (Merchant, p. 228, 1988).

The basis of the explorations of the physical world in search of the essential nature of all things became with

modern science in its epistemology geared toward ultimate prediction and control of the physical environment. This is why the modern era is termed "positivistic", it assumes a positive evolution of human knowledge towards the ultimate objective truth and utopia. It will be argued in the next chapter the social sciences have historically modelled themselves on the methods and missions of the physical sciences, and, from a postmodern perspective, it appears the prediction and control aspects of the modern worldview have historically been used for political purposes (T. R. Young, 1992). What is to be explicated in this chapter is the revolutionary worldview emerging in postmodern physics which will supply the foundation for a revolutionary paradigm in the social sciences.

In postmodern physics, quantum mechanics (1) is causing a revolution as profound in terms of ideas about reality as was the Copernican Revolution and the Scientific Revolution. In quantum theory, all of the basic epistemological and ontological assumptions of the modern era above are overturned.

To begin the discussion I will start with one of the most startling implications quantum theory has for a practical view of reality. This has to do with "matter is composed of particles" the ontological assumption:

> The high energy scattering experiments of the past decades have shown us the dynamic and ever-changing nature

> of the particle world in the most striking way. Matter has appeared in these experiments as completely mutable. All particles can be transmuted into other particles; they can be created from energy and vanish into energy...the whole universe appears as a dynamic web of inseparable energy patterns (Capra, p. 69).

and,

> ...Every subatomic particle has a fixed, definite, and known angular momentum, but nothing is spinning! ...The "spin" of a subatomic particle involves "the idea of spin without the existence of something spinning..." (Zukav, p. 208).

and,

> The speculation that matter may be nothing but trapped light energy arises from the famous Einstein formula, E=mc2 (Toben and Wolf, p. 145).

It is the decentering of the ontological assumption which starts the collapse of the card-house of modern science and its methodological claims of objectivity. The paradoxical results of subatomic experiments have bizarre implications for the physical world. The most well-known experiment illustrating the paradoxes concerning particles involves the dual nature of light (or, more generally, electromagnetic radiation). Light manifests as waves and as particles. It depends on how the experimenter sets up the measuring apparatus whether s/he observes a stream of particles through one open slit, or wave interference patterns through two. Before the measurement is taken, what exists between the light source and the measuring apparatus is a strange kind of in-between reality which physicists describe in the mathematics of probabilities. The way the

measuring apparatus is set up determines whether the experimenter observes wave-like behavior or particle-like behavior (2). Both observations are equally valid and empirically demonstrable.

> This property of matter and of light is very strange. It seems impossible to accept that something can be, at the same time, a particle - i.e. an entity confined to a very small volume - and a wave, which is spread out over a large region of space. This contradiction gave rise to most of the koan-like paradoxes which finally led to the formulation of quantum theory (Capra, p. 55-56).

This brings us to the assumption: "Sense data are discrete" (the epistemological assumption). The epistemological assumption of the discreteness of sense data is basically the idea that each particle, each object in the external world has well-defined boundaries and each occupies its own separate region of space. The ontological assumption "matter is composed of particles" has implicit in it the idea that these are dead particles fundamentally separate from the mind of the human observer. The methods of modern science are based on these ontological and epistemological assumptions. These assumptions are at the root of the search for the basic building blocks of the universe. These two assumptions embody the fundamental idea of "objectivity". Together they assume a world "out there" composed of particles which build up the objects of the physical world.

Yet experiments in the quantum realm continued to present the paradoxes which are overturning this modern

ontology and epistemology. If "particles" are also "waves" and matter is energy in different forms, the structure of modern science is no longer on firm conceptual or methodological ground.

To add to the quantum confusion, the Heisenberg Uncertainty Principle (3) states one can only know the position or the momentum of a particle, never both:

> The important point is that this limitation has nothing to do with the imperfection of our measuring techniques. It is a principle limitation which is inherent in the atomic reality. If we decide to measure the particle's position precisely, the particle simply does not have a well-defined momentum, and if we decide to measure the momentum, it does not have a well-defined position (Capra, p. 127).

As with the experiments showing the dual nature of light, the Heisenberg Uncertainty Principle introduces the observer into the equation as a participant in determining the measurements obtained.

The principle of identity, the modern assumption that the world is a natural order follows from the ontological and epistemological assumptions discussed above. Building on the first two assumptions, it was thought in the positivistic modern era that there was an absolute objective truth. The assumption the world is a natural order is a reflection of the mission of modern science to find the ultimate laws governing the fundamental building blocks. The "order" was thought to be "out there", separate from the human observer.

As physicists searched deeper and deeper for the

fundamental building blocks of matter and the ultimate governing laws of the universe, they found on the subatomic level, matter and energy are interchangeable. What is more, subatomic particles themselves do not seem to exist until someone decides to look for one:

> ...A photon seems to become isolated from the fundamental unbroken unity <u>because</u> we are studying it! Photons do not exist by themselves. All that exists by itself is an unbroken wholeness that presents itself to us as webs of relation. Individual entities are idealizations which are correlations made by <u>us</u> (Zukav, p. 72).

and,

> Quantum theory thus reveals a basic oneness of the universe...As we penetrate into matter, nature does not show us any isolated "basic building blocks", but rather appears as a complicated web of relations between the various parts of the whole. These relations always include the observer in an essential way...in atomic physics we can never speak about nature without, at the same time, speaking about ourselves (Capra, p. 57).

So the question then becomes, "What role does human consciousness play in determining the order of the physical world, what are the limits"? It is here that the <u>interpretations</u> of the quantum equations emerge. Niels Bohr and Werner Heisenberg came up with the most widely accepted interpretation of quantum mechanics in the late 1920s, the Copenhagen Interpretation (Capra, p. 118, 1971). The Copenhagen Interpretation says the state vector, or the mathematical expression describing one of <u>two</u> <u>or</u> <u>more</u> states that a quantum system can be in, should be regarded as mathematical formalism (Wilson, p. 251). The state vectors

describe eigenstates of a quantum system. An eigenstate is one of a finite number of states that a quantum system can be in. In addition, the superposition principle says that, before measurement, a system must be considered to be in all of its eigenstates; measurement selects one eigenstate (Wilson, p. 251). In the above experiment involving the wave/particle paradox, the Copenhagen Interpretation describes the interaction between the "observing system" and the "observed system" . After leaving source A and before being measured at B, the equations of probability show, in the Copenhagen Interpretation, a strange kind of existence in which the photon exists in all of its eigenstates. (See also, Schrodinger's Cat Paradox).

The Copenhagen Interpretation seems to suggests a participatory role of consciousness in the relationship between the observing system and the observed system - "measurement selects one eigenstate" (Wilson, ibid). This interpretation, as seen by Dr. John A. Wheeler (Wilson, ibid.), implies the universe has no reality aside from observation. The extreme form of this view says, "Esse est percepti" - to be is to be perceived.

Many physicists were not satisfied with the Copenhagen Interpretation. In the 1920s Einstein (4) disagreed with Bohr on the point of a belief in a separate external reality:

> In his attempt to show that Bohr's interpretation of quantum theory is inconsistent, Einstein devised a thought

> experiment that has become known as the Einstein-Podolsky-Rosen (EPR) experiment. Three decades later John Bell derived a theorem, based on the EPR experiment, which proves that the existence of local hidden variables is inconsistent with the statistical prediction of quantum theory. Bell's Theorem dealt a shattering blow to Einstein's position by showing that the conception of reality as consisting of separate parts, joined by local connections, is incompatible with quantum theory (Capra, p. 301).

Bell's Theorem (5) essentially shows that everything in the universe is connected! Bell's Theorem shows non-local connetions, which in layman's terms essentially means connections "outside" of space and time.

An alternative to the Copenhagen Interpretation is known as the Many Worlds Theory, or the Everett-Wheeler-Graham Model (6). This model basically says that everything that can happen to the state vector does happen to it (Wilson, p. 204). To use the Schrodinger's Cat Paradox as a common example, the Copenhagen Interpretation would say the cat in the box exists in all of its eigenstates before measurement. It exists in the strange in-between land of quantum probabilities. When an observer comes along and makes an observation, or "pops the qwiff", he collapses the wave function. In other words, measurement selects one eigenstate. At the point of measurement the cat is either alive or dead.

The Many Worlds Theory is described this way by Zukav:

> The Many Worlds Theory says that there is one universe and that its wave function represents all of the ways that it can be decomposed into different possible realities.

> We are all together here in a big box and it is not necessary to look at the box from the outside to actualize it. In this regard, the Many Worlds theory is especially interesting because Einstein's General Theory of Relativity shows that our universe might <u>be</u> something like a large closed box, and, if this is so, it is never possible to get "outside" of it (Zukav, p. 85).

The Many Worlds Theory would interpret the paradox of the equations this way: The cat in the box is existing simultaneously in all of its eigenstates, i.e. it is alive in one eigenstate and dead in one eigenstate, and alive/dead in one eigenstate, not even in the box in another, every possibility. The observer comes along. In one eigenstate s/he opens the box and the cat is alive, in the other s/he opens the box and the cat is dead. In other words, the wave function does not necessarily require an outside observer to collapse the quantum probabilities into "actuality": all eigenstates are simultaneously existing "actualities". Every decision branches the quantum wave into different realities.

> Eugene Wigner was one of the first physicists to point out that consciousness modifies the quantum wave and thereby changes the physical universe (Toben and Wolf, p. 130).

It is here a serious look at quantum ideas of consciousness is needed. Because we are so steeped in the ideas of the modern era, and for all practical purposes live in Newton's machine, the hardest realization to make is that consciousness does not only exist "inside" our heads:

> Something is "organic" if it has the ability to process information and to act accordingly. We have little choice but to acknowledge that photons, which are energy, do

> appear to process information and to act accordingly, and that, therefore, strange as it may sound, they seem to be organic (Zukav, p. 63).

and,

> Where is the line between living and nonliving things? I feel that there is no real boundary. The whole universe is alive, and because of the Einstein connection there is only one unbroken whole. What determines the different degrees of consciousness? If everything is alive, why isn't everything equally conscious? One answer is complexity. We may simply be more complex than the rest of the universe and thereby more conscious, i.e. able to create more connections between events (Toben and Wolf, p. 138"

The above evidence suggests that the "world is a machine" metaphor is inappropriate in describing the physical universe. Along with the blurring of the distinction between living and nonliving, physicists in the postmodern era are having a hard time distinguishing between what can and cannot be called "conscious" (7). These speculations in physics wreak havoc on modern ideas of objectivity. The above brings to mind the meaning of the Chinese word for physics, "wu li - patterns of organic energy" (Zukav, p. 5, 1979). What quantum theorists are proposing is that human consciousness makes the connections which shapes phenomena into meaningful (to us) patterns of organic energy. Human consciousness imposes order upon subatomic "chaos", or an infinite number of possible states (Toben and Wolf, Zukav).

To emphasize the quote from David Bohm (1983, p.x) on the relationship of consciousness and reality at the beginning of this work, quantum theory offers a way to

integrate ideas about the duality of mind and matter in unexpected ways.

Understanding the quantum views of matter and energy allows for an understanding of how consciousness permeates everything in varying degrees of complexity. To some postmodern physicists, pure energy has been equated with pure consciousness, or pure thought, Bohm's "Hidden Variable" (for Jack Sarfatti, the hidden variable is "information") (8):

> Thought takes energy. Could thought be energy? Could consciousness itself be pure energy? Perhaps the many forms of energy are similar to the many forms of consciousness (Toben and Wolf, p. 161).

This equation of consciousness or thought with pure energy does severe damage to such taken for granted ideas of time and space. According to the theory of Special Relativity (Einstein, 1906), nothing travels faster than the speed of light. But the implications of the quantum inseparability principle (9) combined with the speculation that consciousness is pure energy and capable of "traveling" faster than the speed of light opens up an entirely different view of reality than the modern view has hitherto allowed. The word traveling is in quotes above because according to quantum theory, in the non-sensory subatomic realm, ideas of space and time are meaningless.

These ideas are truly revolutionary in terms of our taken-for-granted experience of the physical world. I'm

trying to give the reader enough information to understand what these ideas do to our common experiential ideas of space, time and objects. The view of reality quantum theory points to assumes a relationship between the observer and the observed, between subject and object, for meaningful patterns to emerge, for a "reality" to actualize.

The subatomic realm shows particles abstracting out of the implicate order (10) (Bohm, 1983). The implicate order is the "non-sensory" realm. As stated above, particles emerge out of the implicate order when a measurement is made, when a consciousness is there to look for it. In the language of quantum theory;

> How do we cause a possibility to become an actuality? We "make a measurement". Making a measurement interferes with the development in isolation of the observed system...we actualize one of the several potentialities that were a part of the observed system while it was in isolation (Zukav, p. 72-3).

The important idea to grasp here is quantum theory shows us the possibility that the objects that we see, the objects measured and manipulated in classical physics are not what they appear to be. At the subatomic level which undergirds the physical reality we see around us, we find the methods of observation involved contain certain self-fulfilling prophecies about what is observed. The most important idea here is in the fact that while classical mechanics are valid to a certain point within the human range of perception where objects appear as objects, in the

paradoxes of the subatomic realm we find support for the idea that the "truth" cannot rest in inherent properties of the object observed, but must be seen in the relationship between observer and observed.

As physicists began to explore the realm of the very small, as each experiment on the subatomic level produced sharp paradoxes in results, ideas of absolute "truth" or "falseness" began to lose their meaning. As physicists came closer and closer to finding the basic building blocks through the methods based on the above axioms, they found objectivity could only take them so far because:

> The atomic and subatomic world itself lies beyond our sensory perception...physicists were now dealing with a nonsensory experience of reality and, like the mystics, they had to face the paradoxical aspects of this experience. From then on thereafter, the models and images of physics became akin to those of Eastern philosophies (Capra, p. 38-9).

With the physical sciences coming back to the models and images of Eastern philosophies, there is a need for a better understanding of the how the world we define is the world we create:

> The cogs in the machine have become the creators of the universe. If the new physics has led us anywhere, it is back to ourselves, which, of course, is the only place that we could go (Zukav, p. 157).

Postmodern sociology has room to accommodate the new physics in ways which encourage human responsibility and freedom. The next chapter will synthesize postmodern physics and sociology, showing how human "self" consciousness

evolved out of the undifferentiated, unbroken wholeness that is "reality", and through symbol use, began to build up an "objective world".

endnotes

(1) Quantum mechanics - the mathematical system for describing the atomic and subatomic realm. There is no dispute about how to do quantum mechanics, i.e. calculate the probabilities within this realm. All the controversy is about what the quantum mechanics equations imply about reality, which is known as the interpretation of quantum mechanics. The principle lines of interpretation are the Copenhagen Interpretation and/or Non-Objectivity and/or Bell's Theorem and/or Non-Locality and/or the Everett-Wheeler-Graham multi-worlds model.

(2) The question which puzzled physicists so much in the early stages of atomic theory was how electromagnetic radiation could simultaneously consist of particles (i. e. of entities confined to a very small volume) and of waves, which are spread out over a large area of space. Neither language nor imagination could deal with this kind of reality very well (Capra, p. 35).

(3) Heisenberg's Uncertainty Principle- We can either obtain a precise knowledge about a particle's position and remain completely ignorant about its momentum, or vice versa; or we can have a rough and imprecise knowledge about both quantities. The important point is that this limitation has nothing to do with the imperfection of our measuring techniques. It is a principle limitation which is inherent in the atomic reality. If we decide to measure the particle's position precisely, the particle simply does not have a well-defined momentum, and if we decide to measure the momentum, it does not have a well-defined position (Capra, p. 127).

(4) Einstein-Rosen-Podolsky Effect- The quantum interconnectedness as described in a paper by Einstein, Rosen and Podolsky. The purpose of said paper was to prove that quantum mechanics cannot be valid, since it leads to such an outlandish conclusion. Since Bell's Theorem, some physicists have chosen to accept the interconnectedness, however outlandish it may seem (Wilson, p. 203).

(5) Bell's Theorem- A mathematical demonstration by Dr. John S. Bell, which shows that if quantum mechanics is valid, any two particles once in contact will continue

to influence each other, no matter how far apart they may subsequently move. This violates Special Relativity, unless the "influence" between the particles is not employing any known energy (Wilson, p. 203).

(6) Everett-Wheeler-Graham Model - An alternative to Bell's Theorem and the Copenhagen Interpretation. According to Everett, Wheeler, and Graham, everything that can happen to the state vector does happen to it. (Wilson, p. 204).

*The Many Worlds Theory says that there is one universe and that its wave function represents all of the ways that it can be decomposed into different possible realities. We are all together here in a big box and it is not necessary to look at the box from the outside to actualize it (collapse the wave function). In this regard, the Many Worlds Theory is especially interesting because Einstein's General Theory of Relativity shows that our universe might <u>be</u> something like a large closed box, and, if this is so, it is never possible to get "outside" of it (Zukav, p. 85).

(7) There is a distinction made here and discussed in chapter 3 in more detail between consciousness and self-consciousness. A being is self consciousness when s/he can conceptualize him/herself as an object to him/herself.

(8) An alternative to Bell, Copenhagen and Everett-Wheeler-Graham, as developed by Dr. David Bohm is the Hidden Variable Theory. The Hidden Variable theory assumes that quantum events are determined by a sub-quantum system acting outside or before the universe of space-time known to us. Dr. Evan Harris Walker and Dr. Nick Herbert have suggested that the Hidden Variable is consciousness; Dr. Jack Sarfatti suggests that it is <u>information</u> (Wilson, p 252).

(9) Quantum Inseparability Principle- QUIP, an acronym coined by Dr. Nick Herbert to refer to the non-locality implicit in the Einstein-Rosen-Podolsky argument and explicit in Bell's Theorem. (Wilson, p. 206).

(10) Implicate order - from a Latin root meaning "to enfold" or to "fold inward". In terms of the implicate order one may say that everything is enfolded into everything (Bohm, p. 177).

Explicate order - now dominant in physics in which things are unfolded in the sense that each thing lies only in its own particular region of space (and time) and outside the regions belonging to other things (Bohm, p. 177).

CHAPTER IV

CONSCIOUSNESS AND REALITY IN POSTMODERN SOCIOLOGICAL THEORY: THE FOUNDATION; SYMBOLIC INTERACTIONISM, PHENOMENOLOGY AND ETHNOMETHODOLOGY

> Western thought, insofar as it is dominated by its rational-analytical style of thinking, operates in time-honored juxtapositions of time and space, matter, and motion, morphology and genetics, statics and dynamics, structure and function, system and process. Such dichotomies played a prominent role in the development of sociological theory (The Scope of Phenomenological Sociology, Wagner, p. 68).

> Early sociology developed as a reaction to the Enlightenment, Irving Zeitlin (Ritzer, p. xx)

As the foundations of the modern view of physics discussed in the last chapter are being replaced with a postmodern view of consciousness and matter, a postmodern sociological theory is emerging which integrates schools of sociological thought with the epistemology and ontology emerging in the new physics. The objective of the present chapter is to elucidate this integration from which a quantum model of human beings and a postmodern phenomenology will be derived.

George Ritzer discusses several forces influencing the rise of sociology; the French Revolution, the Enlightenment,

the Industrial Revolution, the rise of capitalism, urbanization. All of these forces are intimately connected with each other and were manifestations of the "positivistic" philosophy and science characteristic of the Enlightenment and the Scientific Revolution as a whole (this philosophy and science are discussed in chapter three). Science was based on the Newtonian view of the universe and the scientific method discussed in chapter three. As Ritzer says;

> Overall, the Enlightenment was characterized by the belief that people could comprehend and control the universe by means of reason and empirical research. The view was that because the universe was dominated by natural laws, it was likely that the social world was, too (Ritzer, p. xx).

Auguste Comte (1789-1825) is considered to be the "Father of Sociology". The anarchy of the French Revolution disturbed Comte, and, "he was critical of the French thinkers who had spawned both the Enlightenment and the Revolution" (Ritzer). Auguste Comte developed his scientific view of sociology which he termed "positivism" or "positive philosophy" and his belief in science and the scientific method can be seen in his evolutionary stages, or his law of the three stages. In Comte's stages, human knowledge goes from the Theological stage (prior to 1300) characterized by the belief that supernatural powers, religious figures modeled after humankind, were at the root of everything; to the Metaphysical stage (1300-1800) in which abstract forces like "nature", rather than personalized gods, explain

virtually everything; to finally, in 1800, the Positivistic stage, the belief in science (Ritzer). Comte believed that sociology would become dominant in science because of "its distinctive ability to interpret social laws and to develop reforms aimed at patching up the problems within the system" (Ritzer).

The history of the social sciences shows the basic epistemological, ontological, and methodological assumptions as those of the physical sciences being used in the hope of finding ultimate social laws. Because the methodology was becoming so successful in the physical sciences, it was hoped by early social scientists that it would prove successful in the study of human beings as well. John Stuart Mill, in A System of Logic, put forth formulations which are still dominant in the social sciences today (Ritzer):

1. The social and natural sciences have identical aims, namely, the discovery of general laws that serve for explanation and prediction.

2. The social and natural sciences are methodologically identical.

3. The social sciences are merely more complex than the natural sciences.

4. Concepts can be defined by direct reference to empirical categories - "objects in the concrete".

5. There is a uniformity of nature in time and space.

6. Laws of nature can be naturally (inductively) derived from the data.

7. Large samples suppress idiosyncracies ("partial causes") and reveal "general causes" (the ultimate

laws of nature) (Lincoln and Guba, p. 20, 1985).

Emile Durkheim (1858-1917) feared and hated social disorder; most of his work was devoted to the study of social order (Ritzer). One can see the influence of the physical sciences and the methodological formulations of Mill's above operating in Durkheim's study of suicide and anomie. The schools of symbolic interactionism, ethnomethology, phenomenology, chaos, and dramaturgy all contribute to the development of this quantum model of human beings. As the basic axioms of the physical sciences are being overturned, so new axioms and methodological assumptions are emerging in the social sciences. Lincoln and Guba discuss the axioms of the Naturalistic Paradigm:

1. There are multiple constructed realities that can be studied only holistically; inquiry into the multiple realities will inevitably diverge (each inquiry raises more questions than it answers) so that prediction and control are unlikely outcomes although some level of understanding (verstehen) can be achieved.

2. The inquirer and the "object" of inquiry interact to influence one another, knower and known are inseparable.

3. The aim of inquiry is to develop an idiographic body of knowledge in the form of "working hypotheses" that describe the individual case.

4. All entities are in a state of mutual simultaneous shaping so that it is impossible to distinguish causes from effects.

5. Inquiry is value-bound in at least five ways.

What is most striking about both the interpretations of quantum mechanics and the emerging postmodern schools of sociological thought is that they contain ideas, expressed in the jargon of their different disciplines, ideas which have been a part of esoteric knowledge systems for thousands of years. Wilbur calls this esoteric knowledge the "perennial philosophy", and it consists basically of the knowledge, through experience - "gnosis" - of the evolution of consciousness. Could it be just a coincidence that this ancient knowledge gained by exploring "inner" dimensions of experience, and the new awareness of the relationship of consciousness and matter gained by exploring the "outer" dimensions of experience, could come to the same conceptual, archetypical, symbolic, conclusions?

It is my opinion that it is not a mere coincidence but a similarity on which a comprehensive paradigm of sociological thought can be built. In this chapter, we will discuss some basic insights of symbolic interactionism, phenomenology and ethnomethodology, and develop the beginnings of an historical analysis using these insights to show the relationship between the evolution of human consciousness and how human consciousness affects the physical world.

There are several sociologists who have advanced sociological theories which fit a quantum model of human beings. This chapter will discuss Symbolic Interactionism,

Phenomenology, and Ethnomethodology. These schools will be discussed in conjunction with historical and archaeological evidence which support the view that the earliest ideas about reality (upon which all subsequent ideas are ultimately based) reflect the coming to awareness of the human species. Humankind's first awareness of itself as something separate from nature, the invention of symbols with which to name and categorize the outer world, and the birth of the individual self-conscious can be seen to follow processes very similar to the ones which were intuited by the founders of these creative sociological theories.

The distinguishing characteristic of the school of Symbolic Interactionism has been explained by Blumer this way;

> The term "symbolic interaction" refers, of course, to the peculiar and distinctive character of interaction as it takes place between human beings. The peculiarity consists in the fact that human beings interpret or "define" each others actions instead of merely reacting to each other's actions. Their "response" is based on the meaning which they attach to such actions (Blumer, p. 139).

George Herbert Mead is a major contributor to Symbolic Interaction theory (Ritzer). Mead noticed the characteristic of human behavior which set them apart from other animals; the fact that human beings are capable of seeing themselves as objects and reflecting back on their own and other's behavior. Mead describes the reactions of animals to each other's behavior as a "conversation of gestures", and says

this type of interaction is instinctual. Mead's illustration involves two hostile dogs, baring their fangs, growling, snarling, walking stiff-legged around each other. According to Mead, the dogs are automatically, unreflectingly, responding to each other's gestures. Human beings, on the other hand, have a mediating process between stimulus and response. This mediating process is "interpretation". Human beings interpret the meaning of each other's actions and they do this by rendering the gesture symbolic;

> Thus, individual A begins to act, i.e. makes a gesture: for example, he draws back an arm. Individual B (who perceives the gesture) completes, or fills in, the act in his imagination, i.e. B imaginatively projects the gesture into the future: "He will strike me". In other words, B perceives what the gesture stands for, thus getting its meaning. In contrast to the direct responses (like the dogs) the human being inserts an interpretation between the gesture of another and his response to it. Human behavior involves responding to interpreted stimuli (Meltzer, p. 8, 1964).

The gesture above, of drawing back an arm, becomes symbolic to human beings through the "developed ability to respond to his own gestures. This ability enables different human beings to respond in the same way to the same gestures, thereby sharing one another's experience" (Meltzer, 1964).

According to Mead, human beings can respond to their own gestures because they possess a "self". Mead saw the origin of the "self" in society. Mead's concept of self involves the ideas of "I" and "Me". The "I" and the "Me" make human beings a "society in miniature". One of the main ideas

presented in this work on the quantum model of human beings is compatible with both the revolutionary theories of quantum mechanics and the esoteric knowledge systems throughout history; that the awareness of a "me", existing as a consciousness "in here", the self as an object separate from the "out there" physical environment is an illusory boundary (Wilbur, 1979).

As this work traces the evolution of human consciousness, we will see that although this separation is a necessary stage in the evolution of consciousness, to maintain it for egoistic reasons past the time of its usefulness, or to maintain it because of the ego's fear of dissolution is ultimately detrimental to the human species and its environment. The insight of symbolic interactionism is that the self is a social construction, an interaction seemingly within the individual of the undirected active "I" and the I as a social object, the "Me". According to Mead, "mind" arises in the interaction of the "I" and the "Me". As the "Me" is a social object, it comes about through the use of significant symbols, namely language, in social interaction:

> It is through language that the child learns the meanings and definitions of those around him. By learning the symbols of his group, he comes to internalize their definitions of his own conduct (Meltzer, p. 10).

Charles Horton Cooley (1864-1929) is also associated

with the school of symbolic interactionism. Cooley's idea of the "looking-glass self" emphasized the fact that people possess consciousness, and it is shaped in face-to-face groups which play a "key role in linking the actor to the larger society". It is basically within the primary groups that the looking-glass self emerges. Mead and Cooley both stress the social and symbolic influences as necessary to the emergence of the peculiar human "self", Mead with his concepts of the "I" and the "Me", and Cooley with his concept of the "looking-glass self".

These ideas are not so different than the ideas of Sigmund Freud when speaking about the "id", the "superego", and the "ego". There are differences which have been discussed elsewhere (Wilbur, 1979-1981, Brown, 1959, Jaynes,1976), but for the purposes of the present work a rough analogy can be drawn. The "id" is the pure active impulse, uncensored and undirected (or, if directed at all, directed by Eros drive, the "life" drive). The "id" would correspond roughly to Mead's conception of the "I". The "id", like the "I", by itself could be said to be "subconscious" or "preconscious", not because it does not possess consciousness but because it is not yet conscious of its consciousness; i.e. not self conscious. The "superego" is the internalized other, the "Me". What Mead called "mind" which arises in the interaction of "I" and "Me", Freud called

"ego", which is what we normally know as our waking self. O'Keefe discusses the emergence of the ego, the self as object, from the critical recognition of "other", and more specifically, how collective rituals helped the individual "ego" to emerge out of the collective "super-ego":

> How odd the ego...The ego has to make itself "magically" out of other things. Basically it is constructed out of its identifications, a process similar to Mead's "mirroring of significant others" (O'Keefe, p. 282, 1982).

Another important idea of symbolic interactionism which helps in building the quantum model of human beings was put forth by W. I. Thomas (1863-1947). Thomas is most widely known for his social psychological statement, "If men define situations as real, they are real in their consequences". This statement means that the total situation and its meaning to the participants must be understood in order to explain human behavior (Psathas, p. 5). Ritzer states that in emphasizing the subjective component, Thomas' "definition of the situation", indeed, symbolic interactionism itself has a microscopic focus standing in contrast to the macroscopic theories of "European scholars such as Marx, Weber, and Durkheim" (Ritzer, p.xx, 1988). Yet, in the development of the quantum model of human beings we've seen in the previous chapters (and further explicated in the following ones), in defining the world as a living organism, human beings acted on the world as if it were a living organism. Likewise, in defining the world as a machine, human behavior reflects that

definition; acting as if the world and other people were machines. The classical sociology discussed in the introduction and the still dominant positivistic schools in the discipline further reflect this "definition of the situation" on a macroscopic level.

Another basic insight of symbolic interactionism in general and Mead in particular is that;

> Human beings live in a world or environment of objects. This bland statement becomes very significant when it is realized that for Mead, objects are human constructs and not self-existing entities with intrinsic natures (Blumer, 1969, p. 68).

When an infant enters the world, his/her impulses are undirected, he/she is not yet an object unto his/herself; in other words, the infant is an "I" without a "Me". In learning the language and symbols of his/her primary group the child learns to differentiate objects in the environment. In this process the child begins to develop a "Me", ("My name is..."), a social object seemingly distinct from other objects. Obviously, in the process of internalizing the significant symbols of his/her culture, he/she is orienting to a larger view of reality, an underlying "definition of the situation", and underlying Truth 1 structure.

We turn now to the phenomenologists and ethnomethodologists for a broader understanding of how the definition of the situation, a human construct, becomes through human action the physical reality they create and experience.

> The story is told that Don Juan visited Castenada's office at one time. In the office were stone busts of the great figures of Western thought: Freud, Marx, etc. Don Juan picked up a bust of Husserl, rubbed its head and said, "Now this is a power object". The implication is clear...Husserl was the philosopher who stressed bracketing - that reality is bracketed; i.e. framed (Dubois, p. 309, 1987).

Phenomenology and ethnomethodology, as sociological schools of thought, are hard to distinguish (Ritzer). Both take the basic tenets of symbolic interactionism and combine them with the concept of "cultural relativity". Both schools emphasize the insight in order to understand the behavior of human beings, the sociologist must understand the meanings the behavior has for the participants; the context in which human behavior takes place, the participants' "definition of the situation". With small groups, different cultures, or with the species as a whole, it can be seen as Mead stated;

> Human society rests on the basis of consensus; i.e. the sharing of meanings in the form of common understandings and experiences (Meltzer, p, 8, 1964).

Phenomenology was founded by Edmund Husserl. As quoted above, Husserl stressed that reality is bracketed or framed. The development of language and other significant symbols necessarily involves consensus; in order for a word or another symbol to serve its purpose, to even come about, it must have meaning to more than one person. Husserl's insight, that the world is framed or bracketed is also a conclusion drawn by many physicists in interpreting the paradoxes of quantum mechanics. As discussed in Chapter Two,

light manifest in two totally contradictory ways, as waves or as particles, depending on how the measuring device is set up - how the experiment is framed. Chapter One discussed the metaphors by which human beings order the world, the underlying myths or Truth 1 structures that give meaning to the universe and existence. In the language of phenomenology, these metaphors are the "frames" by which human beings define the situation existentially, and they act on the physical environment on the basis of these definitions.

Phenomenology and Ethnomethodology borrow insight from anthropology and the idea of "cultural relativity". This idea basically acknowledges that what is considered "normal", (or beautiful, or meaningful, even sacred) in one culture can be considered pathological (or hideous, or irrelevant, or blasphemous) in another culture. Anthropologists became aware of the fact that in order to gain an understanding of the people being studied, one had to understand the terms of their reality, their Truth 1 structure. Students of human behavior had to "bracket" their own cultural conditioning in order to get a clearer view of the world of the people in the culture studied.

As we saw in the first chapter, modern "science" and premodern "myth" are different ways of defining and interacting with the physical environment. Experience

validates each view within each frame. In chapter two, we saw the epistemological and ontological assumptions of the scientific version of Truth 1 are imposed on the physical world. Quantum theory echoes Mead in the idea that objects are human constructs;

> Animals, lacking symbols, see stimuli, such as patches of color - not objects. An object has to be detached, pointed out, "imagined" to oneself. The human beings' environment is constituted largely by objects (Meltzer, p. 16, 1964).

Symbolic Interactionism, Phenomenology, and Ethnomethodology all acknowledge the human participation in the creation of reality which is supported by quantum theory. These theories have traditionally been criticized for being "too subjective". But as the epistemological and ontological assumptions about reality (basics, like space, time, matter, "objects") are overturned in the physical sciences, and physicists themselves acknowledge at the least a "participatory" role of consciousness (some, like Bohm argue consciousness <u>cannot</u> be ignored) in framing reality, the value of insights of these schools in sociological theory becomes strikingly clear.

As mentioned in the introduction to this chapter, classical sociological theory, and the traditionally dominant schools of sociological thought are based on the assumptions of the physical sciences. In the way we view reality, these assumptions are the underlying frame upon which everything

else rests. Since the Scientific Revolution and the Enlightenment, these assumptions have been based on the idea that there is an objective reality "out there" made up of separate objects, unfolding in time and occupying a certain amount of space. With the quantum revolution in physics, there needs to be a real understanding (verstehen) in sociology and other disciplines, of the implications of the role human consciousness plays in creating reality.

Taking the basic concepts of symbolic interactionism, phenomenology, and ethnomethodology discussed above, along with a developmental model of the evolution of human consciousness we can begin to get an idea of the relationship between knowing and being:

> The philosophic tradition which Mead sought to advance defined its task as that of clarifying the relation between knowing and being - between the sentient organism and its environment (Swanson, p. 28).

Since history began when homo sapien began to gain self-consciousness (Brown, 1959, Jaynes, 1976, Wilbur, 1981), and the best way to understand our present state is to psychoanalyse our collective past, the best place to start is where history began. This is the place where Mead's concepts and the insights of the phenomenologists are clearly illustrated. This period is also the period when symbol-using first began.

> The intellectual life of man, his culture and history and religion and science, is different from anything else we know in the universe. That is fact. It is as if all

> life evolved to a certain point, and then in ourselves turned at a right angle and simply exploded in a different direction (Jaynes, p. 9).

The species below homo sapien (homo = man + sapien = wise) on the evolutionary scale of consciousness, seem to act instinctually - there is harmony of instinct and action. Because these species are not "self" conscious, do not possess "egos", they are unable to see themselves as objects and to reflect back on their actions; in short, unable to "think" as we understand it. But they certainly do appear to be conscious! To use Mead's concepts of "I" and "Me" in a broad sense, these species (like a human infant, and like the infantile collective consciousness of the species at the beginning of history) are the epitome of the acting "I". It is a kind of "preconscious consciousness". Primitive hominids were conscious in this way, and they had virtually no effect on the physical environment whatsoever. They were "in tune" with nature; unable to see themselves yet as objects separate from the environment, they blended with nature and lived within her rhythms. This period lasted up to about 40,000 B.C. (Jaynes, 1976, Wilbur, 1981), and we find very little archaeologically except the crudest of stone tools (Jaynes, p. 130, 1976).

During the latter part of this time (approximately 70,000-40,000 B.C.), "...a period characterized climatically by wide variations in temperature, corresponding to the

advance and retreat of glacial conditions, and biologically by huge migrations of animals and man caused by these changes in weather", Jaynes suggests selective pressures behind the development of language through vocal modifiers. Jaynes proposed these modifiers developing gradually from "intentional calls" to the first sentences with a noun subject and a predicative modifier. Archaeological evidence shows the, "...age of nouns for animals coincides with the beginning of drawing animals on the walls of caves and horn implements" (Jaynes, p. 133, 1976). The development of thing nouns is really a carry-over from this stage, and it corresponds archaeologically with the invention of pottery, pendants, ornaments, etc. Then Jaynes proposes an hypothesis that sounds strange but one that contributes to a consistent analogy between the evolution of consciousness and human world views; a postmodern phenomenology. Jaynes lays a foundation for understanding the relationship between consciousness and physical reality:

> Let us consider a man commanded by himself or his chief to set up a fish weir far upstream from a campsite. If he is not (self) conscious, and cannot therefore narratize the situation and so hold his analog "I" in a spatialized time with its consequences fully imagined, how does he do it? It is only language...that can keep him at this time-consuming all-afternoon work. A Middle Pleistocene man would have language to remind him, either repeated by himself, which would require a type of volition which I do not think he was then capable of, or, as seems more likely, by a repeated "internal" verbal hallucination telling him what to do...Behavior more closely based on aptic structures (or, in an older terminology, more "instinctive") needs no temporal priming. But learned

> activities with no consummatory closure do need to be maintained by something outside of themselves. This is what verbal hallucinations would supply...articulate speech, under the selective pressures of enduring tasks, began to become unilateral in the brain, to leave the other side free for these hallucinated voices that could maintain such behavior (Jaynes, p. 134-35, 1976).

Jaynes' thesis in The Origin of Consciousness in the Breakdown of the Bicameral Mind is that as language/symbol use developed, the human species began to develop what we know as self consciousness. As we discussed in chapter two, and this is a major premise of this work, "consciousness" appears to be one unbroken whole, and the different levels of consciousness are different degrees of organization and complexity. As was mentioned earlier, the species below homo sapien on the evolutionary scale, and earliest members of the genus do not differentiate themselves from the physical environment. It takes language, and the naming of things and people for "objects", and therefore an "objective environment" to become apparent to perception. And as Mead and others have pointed out, language and symbol use are inherently social.

Jaynes' concept of the "bicameral mind", where the right hemisphere of the brain was "talking" to the left hemisphere shows the beginnings of the internal dialog of the "I" and the "Me". This also is the point where the first separation occurred and where the very foundations of our modern epistemology and ontology have their roots. As "self"

consciousness was emerging, the species, collectively first and then individually, first felt themselves as objects, and an "object" by its very nature is separate from its surroundings.

The auditory hallucinations discussed above in Jaynes' "Bicameral Mind" theory, were a new kind of social order which, combined with the stabilizing climate, allowed for larger settlements. In larger settlements, hierarchies cannot be maintained in a signal-bound manner, as in smaller, more primitive groups; and so with the development of articulate speech, hierarchies were maintained through the "voice" of the dominant male heard "internally" by the individual. This phenomenon was made possible by the development of the "language areas" in the brain. For Jaynes the right hemisphere of the brain was "talking" to the left hemisphere, and neither part was "self" conscious! This is the very beginning of the internal dialog of the "I" and the "Me" we as self conscious beings are so familiar with.

Jaynes stresses during this period, we know factually from the fossil record the brain was increasing with a rapidity that still astonishes the modern evolutionist (Jaynes, p. 134, 1976). With the death of the king, the dominant male, Jaynes speculates his "voice" was still heard; the dead king became a "god" capable of maintaining social order through auditory hallucinations still heard in the

tones of his voice. In time, these internal "voices" could improvise and say things the king had never said:

> The gods were in no sense "figments of the imagination" of anyone. They were man's volition. They occupied his nervous system, probably his right hemisphere, and from stores of admonitory and perceptive experience, transmuted this experience into articulated speech which then "told" the man what to do (Jaynes, p. 202, 1976).

Language was "spoken" in auditory areas in the right hemisphere and "heard" over the anterior commissure in the dominant left hemisphere. At this point the individual still has no distinct awareness of himself as an object. The bicameral mind was literally a form of social control and therefore social cohesion. This is the age of god-king theocracies. Although Wilbur does not agree on all of the "mechanics" of Jaynes' "bicameral mind", his "mythic membership" period shows many of the same characteristics (for more details compare Jaynes' Origin of Consciousness with Wilbur's Up From Eden).

Jaynes' theory offers the proposition that collective rituals began with the bicameral voices. One of the functions of the gods was to define reality symbolically for the collectivity. Collective rituals "ordered" society. The methods of worship were the first collective rituals, and as can be seen in the Hebrew Old Testament, "god" dictated these rituals in great detail (Jaynes, 1976). Like a child taking its first steps in the world, the ego needs stability and certainty as it begins to emerge. It begins by "naming"

things, defining the physical world, making a secure environment for itself and passing that environment, that basic "world view" (Schutz) onto its children through symbolic information. Jaynes proposes it is in the breakdown of the bicameral mind individual egos actually emerged and man became an object to himself. By the end of the third millenium B. C. , the tempo and complexity of social organization demanded a far greater number of decisions in a far greater number of contexts until, "...the world must have literally swarmed with sources of hallucination...There were gods for everything one might do" (Jaynes, 1976).

Jaynes' theory is that the features of self consciousness were brought about by the advent of language; and this type of consciousness which we attribute only to human beings, what is here called "ego", is of much more recent origin than has heretofore been supposed. Geza Roheim writes, "...words constitute the path to reality, to the world of objects" (O'Keefe, p. 274, 1982), and ego emerged as an "object" so human beings could have the courage to act in the uncertain cymbolic world language and self consciousness created. O'Keefe's theory is that the function of the human ego is to translate passivity to action. In the complicated social world that emerged in the breakdown of the bicameral mind, an uncertain world of symbols in which the voices of the gods became a "babel of confusion" (Jaynes, 1976),

collective rituals evolved to pattern and control meaning. These collective rituals, like sacrifice and initiation, are a prelude to the birth of the individual. Sacrifice and initiation rituals were magical manipulations of religious symbolism which not only provided certainty as to what was going on in the cosmos and strengthened the collectivity, they also, "...toughen the individual members so they can pass through elaborate new role transitions without being torn apart" (O'Keefe, p. 247, 1982).

These "magical" collective rituals gave the newly emerging ego confidence to act in the real world. For Roheim the ego operates by way of the "magical principle", "...in between the pleasure principle and the reality principle is the 'magical principle'" (O'Keefe, p. 34, 1982), which is the transition to action. Once the ego has emerged, it began to construct via the magical principle an "objective" world in its image.

Wilbur discusses the emergence of self consciousness in Up From Eden, and his discussion is in line with the Symbolic Interactionist view of "self" emergence and with Jaynes' "bicameral mind" theory, although Wilbur uses the term "mythic membership period". More than that, Wilbur's work incorporates the esoteric knowledge of the ages and the revolutionary experimental data of quantum physics. All of these theories begin with human consciousness

undifferentiatied from the environment. Wilbur calls this prehistoric time the "archaic uroboric" period and says:

> Dawn Man, in other words, began his career immersed in the subconsciousness realms of nature and body, of vegetable and animal, and initially "experienced" himself as indistinguishable from the world that had already evolved to that point...With self and other confused, with inner experience and external natural world undifferentiated, with no real capacity for true mental reflection or verbal representation, this whole period must have been an experience of a time before time, a story before history - with no anxieties, no real comprehension of death and thus no existential fears (Wilbur, p. 22, 1981).

As humans became aware of themselves as objects distinct from the environment they felt the primordial separation anxiety which included the knowledge of the death of the separate organism. The newly emerged self began to construct cosmologies to make the now-threatening world have meaning, to secure its place in existence. It is this primary boundary between self and not-self that was the beginning of self consciousness and is also still the ontological basis of modern views of reality. Wilbur traces in Up From Eden the continuing differentiation and focusing of consciousness in its evolution from primary fusion of organism and environment, organism separate from environment but mind still fused with body and environment (the beginning of religion and magic), to the emergence of mind as distinct from the body.

As we saw in the first chapter, in the earliest myths we see the emerging ego's first attempts to collectively define

the cosmos, the existential situation. Since then, we can see in the evolution of science the ego's ever-increasing attempts to find the basic building blocks of the universe, which has led to the breaking up of reality into smaller and smaller "pieces" in an attempt to ultimately define the universe and reality, and hence gain omnipotence and omniscience. The undifferentiated consciousness focuses down into a personal self consciousness. Toben and Wolf describe self conscious mind as:

> ...a reality processor, allowing only a tiny awareness so that reality can be constructed and refined, allowing us to focus on specific events and to experience the universe richly (Toben and Wolf, p. 62, 1983).

What is just beginning to be realized with quantum theory is how much of what we call reality is actually a reflection of our own ego superimposed onto the physical world. What is more because the ego is built on unconscious repression (Brown, Freud, Jung, O'Keefe, Wilbur), it is not only consciously projected onto the physical world, it also projects, via the magical principle, everything it represses out onto the physical world. Becker, Brown, Freud, Fromm, Jung, O'Keefe, Wilbur, and others hold that civilization is a result of an emerging ego which asserts infantile omnipotence and denies its own mortality. Civilization therefore can be seen as a denial of chaos and death. O'Keefe describes the phenomenon of the ego projecting "outward" onto the physical world as man's "...falling into the deep well of himself"

(O'Keefe, p. 39, 1982). As stated in the introduction of this work, this phenomenon has been described in various ways, and is a descent into literalness, into appearances, and is indeed a proliferation of the It-World (Buber, 1958). As ego expands and establishes itself as an object we can trace a definite trend throughout the human species' intellectual history toward the rational-scientific technostructure we call "reality" in contemporary times. The advance of civilization can be described as a building up of information and structure.

Once the "ego" is completely separated from the body and the larger physical environment, as it is in current times, the insights of Dramaturgy and Chaos theory become apparent as will be seen in the next chapter.

CHAPTER V

DRAMATURGY, CHAOS, AND THE QUANTUM MODEL OF HUMAN BEINGS: AN UNDERSTANDING FOR THE 21RST CENTURY

> All the world's a stage
> And all the men and women merely players:
> They have their exits and their entrances;
> And one man in his time plays many parts...
>
> from "As You Like It", William Shakespeare.
>
> Are you genuine? Or merely an actor? A representative? Or that which is represented? In the end, perhaps you are merely a copy of an actor...
>
> from Twilight of the Idols, Friedrich Nietzsche, p. 472
>
> Finally, some writers such as Hammond have suggested that what seems most modern in religion; its celebration of man, is magical. There may even exist a "Theology of Magic", in the sense that some modern theology celebrates "grown-up man" and his "courageous" use of his symbolic powers (O'Keefe, p. 213, 19).

In the last chapter we began a phenomonologial analysis of human history in an attempt to show how this process mirrors the cosmic evolution of consciousness. In attempting to integrate these ideas with the evidence of quantum physics, the aim is to give the reader an intuitive "image" of how consciousness and "reality" seem to be related. The essence of this entire work is to show the relationship of "knowing" and "being" is not merely an intellectual concept

to be "known" only in the abstract; rather, the aim of the integration of knowing and being is the Dionysian ideal, where one is "no longer an artist, but has become a work of art" (Brown, p, 175, 1959).

The analysis begun in the last chapter showed the evolution of consciousness which gradually focused into a spatialized self-reflective "ego". We discussed the ideas of Brown, Becker, Jaynes, Wilbur; in which the very sense of being a separate self, the very act of becoming self-conscious, brings into being at the same time the conscious awareness of the death of the separate self. The previous chapters have been intended to show the knowledge process in the premodern and modern eras reflected the emergence and establishment of the self-conscious ego; its explorations and the metaphors used to organize the experience of the physical environment were still part of the naming and categorizing stage of the knowledge process. This stage was the foundation for the scientific search for the basic building blocks of nature. The ego begins to construct a secure, predictable environment; this is the root of the mission of modern science, both physical and social.

In terms of the cosmic evolution of consciousness, Wilbur and the esoteric "perennial philosophy" describe the human knowledge process as the erection of a series of self/not-self boundaries:

> At the base of the spectrum (of consciousness), the person feels that he is one with the universe, that his real self is not just his organism but all of creation. At the next level of the spectrum, the individual feels that he is not one with the All but rather one with just his total organism. His sense of identity has shifted and narrowed from the universe as a whole to a facet of the universe, namely, his own organism. At the next level, his self-identity is narrowed once again, for now he identifies mainly with his mind or ego, which is only a facet of his total organism. And on the final level of the spectrum, he can even narrow his identity to facets of his mind, alienating and repressing the shadow or unwanted aspects of his psyche. He identifies with only a part of his psyche, a part we are calling the persona (Wilbur, p. 9, 1979).

We left off in the last chapter with the "ego" appearing through language and the creation of a spatialized "inner self". We saw how history seems to support the hypothesis put forth by the various authors quoted in this work of the kind of development described above which began with an initial embededness of the human psyche in nature. The earliest premodern myths reflect the lost feeling of unity the initial awareness of separation, the first awareness of the organism as separate from the environment, brought:

> ...The written records and the mythologies of that time scream out in psychological anguish, and in ways <u>never</u> before voiced or recorded. That "something unheard of" was announcing its presence throughout the civilized world.
>
> Wherever I turned there was evil upon evil
> Misery increased, justice departed,
> I cried to my god, but he did not show his countenance
> I prayed to my goddess, she did not raise her head.
>
> That from poor Tabi-utul-Enlil, around 1750 B.C., Babylonia, fifteen hundred years before Job. (Wilbur, p. 288, 1981).

The various authors quoted in this work disagree on the specifics of this emergence of ego; Jaynes proposes the "bicameral mind", Wilbur calls this period the "mythic membership period". For a more detailed discussion of these specifics see bibliography for references. In spite of the various specifics, these theories agree it took language and the internalization of the social "other" for the birth of the individual "ego". These authors also agree the emergence of the ego created an entirely new social/symbolic world in which human beings had to learn to navigate.

Self consciousness gives rise to the awareness of death in the organism. This marks the beginnings of culture and civilization (Brown, Becker, Jaynes, Wilbur). As self-consciousness deepened, so too did the sublimation of the fear of death through the buildup of culture and cultural "immortality symbols" (Brown, Jaynes, Wilbur).

We begin here with the objectification of the universe culminating in the rise of technology and the politics of advanced capitalism; the building up of information and structure, and the "shrinking of the world" which has occurred since this ego emerged. As mentioned in the introduction, our age is the "necrophilic age", the "proliferation of the It-World", the age in which the "death instinct" holds sway. The separation of the ego from the external world and from the body, and the subsequent shift

from the "world is an organism" to the "world is a machine" metaphor is a sublimation of the awareness of death and is at root "necrophilic", as Fromm describes:

> Necrophilia in the characterological sense can be described as the passionate attraction to all that is dead, decayed, putrid, sickly; it is the passion to transform that which is alive into something unalive; to destroy for the sake of destruction; the exclusive interest in all that is purely mechanical. It is the passion "to tear apart living structures" (Fromm, p. 332). (emphasis mine).

At each level of differentiation in the evolution of consciousness, the self/not-self boundary contracts, until the limited "persona" becomes a well-fortified island in the midst of an objective, alienated landscape seemingly devoid of life.

Dramaturgy as a sociolgical school emerged as a variation of symbolic interactionism. As can be noted in the introductory quote by Shakespeare, the dramaturgical principle is neither a recent development nor an exclusively sociological concept; it is a recognition of the dramatic or expressive/impressive characteristic unique to human social existence (Brissett, Edgley, 1990).

An important distinction to be made in this work in dealing with the evolution of consciousness is between the dramaturgical principle, which is a given in all human interaction, and the dramaturgical awareness. Dramaturgical awareness is described by Brissett and Edgley:

...Human beings may come to be not only expressive, but

> also aware of their expressiveness. The awareness of this principle can then be used to organize one's experiences, communicate more effectively with other people, manipulate and deceive them, or present one's self in a more favorable light (Brissett, Edgley, p. 5, 1990).

In the spectrum of consciousness discussed above, the dramaturgical awareness is a defining characteristic of the persona level in which the mind is separated from the "outer" environment, the body, and even, in many cases, its own unwanted aspects. We are making no judgements of right or wrong here, or saying the persona level and/or the dramaturgical awareness is deceitful and maladaptive in itself, it is a necessary componant of an intense level of self-consciousness, and it adds to the richness of human existence. The problems start occurring in cases where this level is extremely alienated, whether collectively or individually. This basically occurs when, instead of moving on in evolution to the acceptance of death and the integration of the "shadow" (Jung, 1968) in the transcendence of the purely personal ego; the process becomes stagnant, the repression of this awareness and integration becomes the pursuit of power and the accumulation of external immortality symbols.

The dramaturgical awareness is used, as politcal dramaturgists have pointed out (Welsh, Young), to literally brainwash the masses into supporting whatever insanity or inhumanity necessary in order to keep the economic machine

running - for as Brown and others have pointed out, money is the ultimate immortality symbol, the "visible god" (Brown, p. 240-41). Individuals, too, in the subliminal search for the immortality of their "persona", spend literally all of their time manipulating, fortifying and presenting their "selves" with all of the material accoutrements of capitalistic society. At this level, Erich Fromm discusses the rise of a new "religion":

> ..."industrial religion", that is rooted in the character structure of modern society, but is not recognized as "religion". The industrial religion is completely incompatible with genuine Christianity. It reduces people to servants of the economy and of the machinery that their own hands build (Fromm, p. 146, 1976).

and Brown says:

> The more the life of the body passes into things, the less life there is in the body, and at the same time the increasing accumulation of things represents an ever fuller articulation of the lost life of the body (Brown, p. 297, 1959).

We saw in the last chapter one of the things helping to give the "self" the stability to emerge was collective rituals such as sacrifice and initiation. Collective rituals helped to achieve social order because they effectively direct the spontaneous "I" into socially meaningful and productive behavior with the internalization of the other and the creation of a "Me".

The dramaturgial awareness is used by those in power to keep in place the illusion that the modern scientific world

view with its accompanying philosophical/existential assumptions and resulting economic and political structures, is the "true" and only reality. Individuals in industrialized modern societies internalize this world view as the only reality and the majority learn to play by the rules. Weber's work on the Protestant Work Ethic and the Spirit of Capitalism shows how the complicated relationship we've been discussing between modern philosophy, economics, and politics became infused and integrated with religious worldviews. and illustrates how the modern scientific world view functions as a religion (see also Brown, 1959). It is interesting for our purposes to notice two of the things this "religion" implies about being in the world; one, material success is proof of divine grace, and two, the concept of life after death of the Judeo-Christian heaven contains the idea that the personal ego, the "persona" survives unchanged in "heaven" or in "hell" eternally after death.

"Patterns" of symbolic behavior/interaction with long-term repitition harden into "structures" (Young, 1992). These are the structures we recognize as philosophical/ metaphysical assumptions or world views, the economic machine, political organizations/ideologies, as well as more microscopic interactions such as marriages and the like. As each generation internalizes the ontological and epistemological, and well as the existential assumptions of

the modern worldview, the objective "It-World" hardens into structures allowing minimal spontaneity and creativity.

Nietzsche was one of the philosophers who first began to catch a glimpse of the existential situation these "hardening" structures were beginning to create for the human race:

> The time has come for man to set himself a goal. The time has come for man to plant the seed of his highest hope. His soil is still rich enough. But one day this soil will be poor and domesticated, and no tall tree will be able to grow in it. Alas, the time is coming when man will no longer shoot the arrow of his longing beyond man, and the string of his bow will have forgotten how to whir! I say unto you; one must still have chaos in oneself to be able to give birth to a dancing star. I say unto you; you still have chaos in yourselves (Nietzsche, from Kaufmann, p. 129, 1963).

In contemporary times in Westernized societies the "proliferation of the It-World" (Buber, 1958), the buildup of information and structure, has inhibited the spontaneous activity of the "I". The contraction of the self/not-self boundary from the universe to the biological organism initiated the experience of the physical environment as "other". The contraction of the self/not-self boundary to the "mind-ego" made normal healthy bodily functions seem foreign, dangerous, evil (Brown, Freud, Fromm). In an existential sense, especially in Nietzsche's view, when social interaction takes place in the context of an overarching "definition of the situation" which is constraining and limiting, and which alienates people from

the life in the body, the result is alienation from the immediacy of life.

The dramaturgical ideas of "role-playing" and "role-distance" help to illustrate the inhibition of the spontaneaity of the "I", which is a consequence of conforming too closely to restricting world views. In "role-playing" one is wholly identified with the role, one plays rigidly to the script of the role. The idea of "role-distance" has the individual still playing a role, yet his/her entire self-identity is not invested in the role, and there is room for flexibility and creative ad-lib. When one is "role-playing" one is in a sense a more passive "reactor", adapting oneself to fit the "definition of the situation" properly at all times. "Role-players" participate in a drama already preconstructed, and it has been said, "role-playing is for insecure people" (Edgley, Theory class, 4-10-90).

The difference between "role-playing" and "playing the role with distance" seems to be the spontaneous, creative spark involved in the latter. When an individual "plays the role with distance", he/she is the role played at any given time, yet he/she doesn't invest his/her entire sense of self into a few, rigid roles as happens in "role-playing". People who "play the role with distance" continually create themselves. They still have roles in their lives, but they become more than their roles.

In the evolution of consciousness and the phenomenological analysis of history, consciousness is narrowed to only acceptable aspects of the mind. This happens collectively and individually. Civilization, "progress", has been an attempt to define good and evil and then to eliminate the evil (Wilbur, 1979). To the ego, chaos, uncertainty, death, fear, have always been the biggest evils; hence the restricted, orderly modern scientific worldview. In spite of the marvels of technology, our dream of progress has not eliminated chaos and uncertainty in the world, in fact chaos and uncertainty have historically been increasing.

> The goal of separating the opposites and then clinging to or pursuing the positive halves seems to be a distinguishing characteristic of progressive Western civilization - its religion, science, medicine, industry. Progress, after all, is simply progress <u>toward</u> the positive and <u>away</u> from the negative. Yet, despite the obvious comforts of medicine and agriculture, there is not the least bit of evidence to suggest that, after centuries of accentuating the positives and trying to eliminate negatives, humanity is any happier, more content, or more at peace with itself. In fact, the available evidence suggests just the contrary: today is the "age of anxiety" of "future shock", of epidemic frustration and alienation, of boredom in the midst of wealth and meaninglessness in the midst of plenty (Wilbur, p. 20, 1979).

The dream in the social sciences of finding the ultimate social laws -and modern society in general - seeks the reduction of all spontaneous activity back into ritual (O'Keefe, 1982) and is an "authoritarian dream" (Young, 1992). The works of Weber and Marx on bureaucracies and the

economy were some sociological elaborations of dimensions of this aspect of modern society as it was emerging (see bibliography).

The modern character structure described by Fromm in To Have or To Be? describe how the dramaturgical awareness has come to be employed by modern individuals:

> What shapes one's attitude toward oneself is the fact that skill and equipment for performing a given task are not sufficient; one must be able to "put one's personality across" in competition with many others in order to have success. If it were enough for the purpose of making a living to rely on what one knows and what one can do, one's self-esteem would be in proportion to one's capacities, that is, to one's use value. But since success depends largely on how one sells one's personality, one experiences oneself as a commodity or, rather, simultaneously as the seller and the commodity to be sold. A person is not concerned with his or her life and happiness, but with becoming salable (Fromm, p. 148, 1976).

In other words, as Brown and others have pointed out, human beings get so caught up in the denial of death, the pursuit of material immortality symbols, and the maintenance and presentation of "acceptable" selves, they forget how to truly live. In the withdrawal of consciousness into the narrow confines of the mind-ego, the facet called the persona, and in the hiding of shadow aspects through externalization, human beings become alienated from the external world and from their own bodies and the richness of sensual existence is diluted.

Buber's work I and Thou articulates two modes of relation, the I-It relationship and the I-You relationship.

Buber recognized the I-It relationship as a necessary stage for human beings; self-consciousness requires the awareness of the self-as-object:

> ...The primitive man speaks the basic world I-You in a natural, as it were still unformed manner, not yet having recognized himself as an I; but the basic word I-It is made possible only by this recognition, the detachment of the I (Buber, p, 73, 1958).

Chapter three in this work discussed the views of reality emerging in quantum physics, where "consciousness" does not appear to be confined to "inside" our heads. Essentially, Buber's I-You relationship acknowledges this fact while the I-It relationship does not. The two modes of relation are described by Buber as:

> ...that in which I recognize It as an object, especially of experience and use, and that in which I respond with my whole being to You (Buber, p. 16, 1958).

The modern era discussed throughout this work is characterized by the domination of the I-It relationship over the I-You relationship (Buber, 1958), the era in which having is more important than being (Fromm, 1976) for all of the reasons discussed above. This relationship with the "external" physical world, including other people, is exploitative when it becomes the exclusive mode of relationship. This all contributes to what has become known as the "Postmodern Condition", which is described by T. R. Young this way, which description deserves to be quoted in full:

> The Enlightenment faith in Reason has, then, in postmodern understanding, turned back against the human project (Rosenau, 128ff). It has produced a postmodern condition in which all that is left of the social process are images and ideologies produced en masse by cynical and cunning technicians who use what they know of psychology, of art, and of electronics to engineer the sociology of fraud in market, politics, academia and religion on behalf of which ever client has the funds and the Will to Power to do so. In such a society, dramaturgy is turned from its ancient use in the drama of the Holy to sanctify a Universal Subject (understood to be an historic and collective product) to its modern use in late monopoly capitalism to colonize the consciousness of voters, customers, workers and students.
>
> Such a reading of science and the society which it creates is bleak indeed. Much of the postmodern critique sees social processes hostile to human agency, uninformed by humanism, unresponsive to erotic joy, incapable of creative surprise, and unashamed of its own destructive activity. Modern scienctists calmly and innocently build nuclear bombs and plants, provide infra-structure for a neo-fascist state run by friendly liberals who use medicine and computers instead of clubs and boots to police its dissidents. Modern scientists invent 3003 new toxins each year with which to infect the earth. Modern scientists go everywhere and study everything at the behest of those who would control everyone. They know no shame at plumbing the depths of the human psyche and using that knowledge to generate markets from those with discretionary income and, in passing, generate crime from those without (Young, Reinventing Sociology, p. 8, 1992).

The Postmodern era challenges all of the modern "absolutes", universals; "all claims to objective Truth and all pretensions of perfection (Young, unpublished manuscript, 1992). In rounding out this quantum model of human beings in postmodern sociology, we now turn to the work of T. R. Young (1) and the postmodern theories of Chaos (2).

Chaos theory in sociology and other disciplines is a postmodern theory which allows a world view, unlike the

modern world view, acknowledging chaos and disorder, instead of explaining them away as error, deviance, faulty design, etc. (Young, 1992). Chaos theory merges with quantum theory in ways permitting more liberating, creative modes of being-in-the-world. The implications of chaos theory for the knowledge process, like those of quantum theory;

> ...are of the same magnitude as the contributions of Galileo, Newton, and logical positivism...Chaos theory teaches us that certainty about uncertainty is possible; reason can be informed by uncertainty; therefore rational human agency is possible. Postmodern phenomenology can be, as we shall see, joined to postmodern science to produce emancipatory knowledge (Young, p. 8-9, 1992).

Chaos theory does not speak of absolute truth statements any more than quantum physicists speak of the "absolute" material existence of a particle. Rather, Chaos theory discusses "fractal truth values" which expand the Aristotelian either/or to include the quantum "maybe" discussed in chapter three. Chaos theory tells us the number of possible paradigms with which to organize experience and knowledge is essentially infinte; the choice of which paradigm to place on a pedestal of "truth" (the truth 1 of chapter two) is in fact a choice totally emmeshed with values. The argument presented here asserts as consciousness was evolving, the premodern and the modern worldviews were, in a sense, determined by the level of consciousness reached by the majority of individuals. It should be noted, though, many of the postmodern insights about the creation of reality

- the relationship of consciousness and reality -

have been components of esoteric knowledge systems for centuries, And when only a minority of people understand this relationship, paradigm selection becomes a political act;

> It is, arguably, the stratification of power and wealth which, in the final analysis, shapes the selection of paradigms on the road to knowledge. Kings, princes, popes, as well as corporations and state functionaries use power and wealth to sponsor or repress the knowledge process...After much murder, torture, and intimidation, the views of the more powerful group tend to be accepted as official truth. The self-fulfilling prophecy has much help from guns, clubs, and fists in premodern societies. It has more help from depth psychology, mass media, pageant and parade in civilized societies (Young, p. 10, 1992).

As discussed earlier, the attempt to grasp and manipulate wealth and power, external "immortality" symbols, is the attempt of the ego to deny death. The modern world view, as has been shown, is characterized by the positivistic attempt to discover the "ultimate governing laws" of physical and social systems, and hence, to become omniscient and omnipotent. Implicit in this search for ultimate laws is the epistemology and ontology outlined in chapters three and four. The dominant myth becomes newton's machine, and one of the most unfortunate consequences of this myth is that the universe and human existence come to be viewed and <u>lived</u> deterministically because there is no room for "messiness", spontaneity, creativity, <u>change</u> in the linearity of the modern world view.

Chaos theory recognizes the "structures" viewed in a

deterministic and "external" fashion in the modern world view are, "patterns of symbolic behavior repeated over countless iterations", and these structures are "themselves historical and ever-changing" (Young, p, 5, p. 12, 1992), and therefore, as has been described throughout this work, change as consciousness changes. The mathematics of chaos show how systems can progress in a lineaar fashion through four bifurcations and at the fifth cascade into chaos. As the system bifurcates, increasing control becomes counterproductive. The disorder outweighs the order, and chaos researchers find new order can emerge nonlinearly, unpredictably, discontinuously. It is in this aspect of postmodern chaos theory that human agency takes a central position in the creation of reality;

> Postmodern philosophy of science offers a much wider and uncertain set of missions for the knowledge process. Absolute truth is out; firm and final control of nature and society is foregone; sure and certain knowledge of everything is abandoned. But in exchange, the human hand and the human soul become visible as architects of the very knowledge process which describes existence. Given the human element in creating the realities of which we can have knowledge, the future is open and it is increasingly amenable to human agency. Whether that is cause for optimism or deep despair is also a human choice. We have it in our power to fashion a society and a knowledge process congenial to the human project or one in which we are all strangers and enemies each to the other (Young, p. 23-4, 1992).

Chaos theory and the revolution in physics reflect the next level of consciousness, where as quoted at the beginning of this chapter, the human race "courageously uses its

symbolic powers" to consciously create reality. With increased consciousness comes increased power to shape physical reality via technology, both for good and for ill. In an overarching "definition of the situation" in which human beings are passive cogs in a universal machine, an underlying truth 1 assumption in which the ultimate goal is perfect prediction and control, room for human agency dwindles, spontaneous activity and genuine feelings become stifled in a world which views such things as deviant, irrational, and things eventually to be controlled. In the reduction of all spontaneous activity back into ritual (O'Keefe), the universe in the modern world view becomes a machine no longer controlled by its creators. Buber says:

> ...an instant ago you saw no less than I that the state is no longer led: the stokers still pile up coal, but the leaders merely seem to rule the racing engines. And in this instant...you can hear as well as I how the machinery of the economy is beginning to hum in an unwonted manner; the overseers give you a superior smile, but death lurks in their hearts. They tell you that they have adjusted the apparatus to modern conditions; but you notice that henceforth they can only adjust themselves to the apparatus, as long as that permits it (Buber, p. 96, 1958).

Chaos theory and quantum theory both offer postmodern world views asserting the opportunity for human values to play a part in the creation of "reality". But it takes an "expansion of consciousness", in a sense, to "bracket" one's own cultural/parental conditioning enough to allow one to empathize with and understand, and most importantly to

concede a "fractal truth value" to the world views and customs of people radically different than oneself. As discussed earlier, this realization was a major influence to fields such as anthropology, psychology, sociology.

This expansion of consciousness involves in the first instance a relaxation of the confines of the persona to allow for an increasing awareness of the relativity of such terms as "good", "beautiful" , "evil", or "ugly", both in terms of cultures and individuals. The first step is in relaxing the narrow absolutes of "good" and "evil" in the persona so formerly repressed shadow aspects can emerge and be integrated. Chaos theory, as its name implies, gives some of the collective "shadow" elements - disorder, uncertainty - a valid place in human experience.

It is interesting to note the subtle presence of the emerging ego in the way the Genesis story of the Tree of the Knowledge of Good and Evil was translated from the ancient Hebrew. In this translation, one can glimpse the very roots of the modern mission of science discussed in earlier chapters, and, ironically, also the metaphysics of postmodern science:

> Let us consider now the phrase (in Genesis II, verse 9) the tree of the knowledge of Tau and Raa, translated good and evil. All the Hebrew words relating to this tree convey intense movement. In fact, it is a whirlwind destroying all that is absolute, as well as all accumulations, which must constantly be swept away by the totality of life that is creative and always new. This

> concept becomes clear to us when we realize that, in reading the Bible as we know it, the word Tau according to its letter numbers, expresses the continuity of existence (of the ego and persona) to which we cling to as "good", and the word Raa, that uproots our static habits of living is translated "evil" (Suares, p. 102, 1973).

In allowing disorder and uncertainty and expanding the confines of the modern, newtonian world view, Chaos theory and quantum theory open the door in the postmodern era to the re-integration of repressed elements on all levels of the spectrum of consciousness. This means an expansion of our definition of consciousness, an expansion of the self/not self boundary to ultimately reconnect mind, body and "external" reality. This expansion of consciousness to include the universe, as Wilbur points out, is not to be understood as implying the experiential world is merely a product of our imaginations (subjective idealism), only that our boundaries are (Wilbur, 1979). Quantum theory shows us an unbroken wholeness of energy/matter reminiscent of Alfred North Whitehead's philosophy of "organism" and "vibratory existence";

> Which suggests that all the "ultimate elements are in their essence vibratory". That is, all the things and events we usually consider irreconcilable, such as cause and effect, past and future, subject and object, are actually just like the crest and trough of a single wave,
>
> a single vibration...Thus, as Whitehead puts it, each element of the universe is "a vibratory ebb and flow of an underlying energy or action (Wilbur, p. 23, 1981)

This unbroken wholeness, or "unity consciousness" as Wilbur calls it, is also called Sunyata or the Void. Of

course, on the surface, this unity consciousness appears to be the very dissolution the ego has spent hundreds of years trying to repress. But it is important to note here the concept of the Void does not mean blankness or vacant absence, as Wilbur elaborates:

> ...When the Buddhist says reality is void, he means it is void of boundaries. He does not mean that all entities simply up and vanish, leaving behind a pure vacuum of nothingness, an undifferentiated monistic mush. Speaking of the Void, D. T. Suzuki says that it, "does not deny the world of multiplicities; mountains are there, the cherries are in full bloom, the moon shines most brightly in the autumnal night, but at the same time they are more than particularities, they appeal to us with a deeper meaning, they are understood in relation to what they are not" (Wilbur, p. 41, 1979).

In the same way, the transcendence of the purely personal ego, or persona, <u>includes</u> the evolution that has come before it, which means the levels that have differientiated out of the primary "preconsciousness", to reiterate; the "body-ego", the "mind-ego", and the persona, still exist, but no longer repressed and alienated. In transcending the restricted modern worldview the human race goes a long way toward the transcendence of the ego. The postmodern era opens up the possibility of human agency in the creation of reality, for as Buber says, "...to gain freedom from the belief in unfreedom is to gain freedom" (Buber, p, 107, 1958), and allows for the "resurrection of the body" (Brown, p. 307, 1959) and a realization of the Dionysian ideal mentioned at the beginning of this chapter.

The postmodern world view can allow the inhibited "I" of the modern era the chance to create a meaningful world. This creative interaction is described here by Brown in what is a perfect note to leave the reader with:

> The life instinct, or sexual instinct, demands activity of a kind that, in contrast to our current mode of activity, can only be called play. The life instinct also demands a union with others and with the world around us based not on anxiety and aggression but on narcissism and erotic exuberance...In the words of Thoreau: "We need pray for no higher heaven than the pure senses can furnish, a purely sensuous life. Our present senses are but rudiments of what they are destined to become (Brown, pp. 307-8, 1959).

endnotes

(1) The work on Chaos theory here is all taken from the work of T. R. Young. There is so much material included in here I limited the postmodern chaos theory to T. R. Young's or else I'd never have finished writing.

(2) Chaos is a science which deals with the complex harmonies and dis-harmonies between and within order and disorder. Chaos focuses upon states with multiple periods or without discernible periodicity. It describes the patterned behavior of dynamic systems as "strange attractors". Chaos work studies the transitions between linear to non-linear states of such dynamical systems. It takes as its field most of the behavior of systems in the universe. [From Chaos, <L. <G. abyss; from which our word, chasm also comes. The presumed original state of disorder of the unformed world. Funk and Wagnalis Dictionary] (Young, "Chaos and the Drama of Social Change: A Metaphysic for Postmodern Science", p. 2, 1992).

CHAPTER VI

CONCLUSION

The quantum model of human beings for postmodern sociology is intended to show how consciousness and reality are related. This work is an attempt to show the historical phenomenology of the evolution of human consciousness as reflected in the dominant myths or truth 1 structures by which the species has organized knowledge of the physical world. These structures of "knowing" cannot be separated from the process of "being"; from the practical experiences and actions of human existence.

The relationship of knowing and being, or consciousnesness and reality, shows the creative nature of human consciousness. The ego and the "magical principle" (O'Keefe, 1982) by which it operates marks the beginning of human history and the point the species began to "shape" the physical environment. The ego has brought us very far in terms of knowledge and technology, but has also repressed our sensual existence and alienated us from the external world. Consequently the physical environment and human relationships suffer dearly in modern times. One of the most tragic aspects of the postmodern condition is the fact that most people have so bought into the modern world view they don't

even realize the extent of their own alienation, and look upon even the possibility of reality being other than that of the modern worldview as an impossibility. If the history of science can teach us anything it must be that the knowledge process has always been driven by those willing to look beyond the "frame" - and the "frame" seems always to have been pushed hardest by those who gain power and profit from having others believe it.

In showing the phenomenology of the evolution of consciousness throughout history the primary goal has been to dispel the boundary between "inner" and "outer"; to show one movement. As quoted in the introduction, "to acquire mystical knowledge means to undergo a transformation; one could even say that the knowledge is the transformation" (Capra, p. 297, 19). In the same way, the quantum model of human beings seeks to merge abstract quantum theory with practical experience. Postmodern sociological theories show us this "gnosis" makes the world an uncertain place, but a fascinating and liberating one!

The quantum model of human beings do not plunge us into a void of no "certain" knowledge at all; does not obliterate previous and practical knowledge. The quantum model of human beings and chaos theory, "does not discredit modern science so much as expand it" (Young, p. 3, 1992). The quantum model of human beings shows an interconnectedness among objects and

events in the universe, an unbroken unity of matter and energy, of seer and seen, of subject and object. This interconnectedness does not deny sensual experience and existence, but offers no absolute explanation of what is "really" "out there". The quantum model of human beings offers phenomenological evidence of the relationship between the reality we experience "out there" and the reality we define "in here".

Likewise, chaos theory expands modern science to include qualitative methodology and nonlinear mathematics. As mentioned earlier, chaos theory speaks in terms of fractal truth values. For example,

> In modern science, the standards of truth center around binary truth values. In Newton's paradigm, the future was knowable with a truth value of 1.0; if findings did not confirm previous results, the truth value of a new hypothesis was 0.0. In a chaotic universe, the truth value of a prediction varies from 0.0 to .999 but is seldom 1.0 (except in the special case of a perfectly special, temporary and unlikely case of a perfectly stable state point attractor) (Young, p. 21, 1992).

Roger Penrose suggests three types of scientific theory, each with its own degree of facticity or truth value, "superb" theories, "useful" theories, and "tentative" theories. Superb theories are experimentally precise, and useful theories can be "raised" to the superb category given enough evidence (Young, p. 12, 1992). Chaos theory stresses that in the research process, one must take into account the region of phase space being studied and the scale of

observation, and statements made about one region or scale may not hold true at another. Young says:

> Mandlebrot points out that the dimensions of a ball of twine depends upon scale; if one is far from the ball, it is a point having but one dimension. At middle distances, it is a ball having three dimensions. Upon closer observation it is a line having two dimensions. When one moves in to a molecular and atomic scale, the ball of twine opens up and disappears into a network of interacting energy waves (Young, p. 11, 1992).

Each observation yields fractal truth statements. As this work and others suggest (see bibliography), the mission of science for the 21st century is to make the knowledge process amenable to the human project. This work is a foundation, and raises questions and issues which can be explored in future works. As a foundation, too, this work only suggests the barest skeleton of a quantum model; many aspects only briefly touched on here will require future work to explore deeper.

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