
1

Stanislav Grof

East and West: Ancient Wisdom and Modern Science

Science and technology have become dominant forces in the modern world, and Western civilization, pioneering in technological development, is commonly seen as a symbol of progress and enlightenment. A tendency to glorify progress and evolution and to look down upon the past as a time of infancy and immaturity is associated with the view that the ideological and cultural differences between East and West are absolute and unbridgeable. This view was most succinctly expressed by Rudyard Kipling in his famous "East is East and West is West/ and never the twain shall meet."

A major reason for the incompatibility of the ancient and the modern, as well as the Eastern and the Western, has been fundamental difference in their dominant world-views and philosophies. Western scientific disciplines have described the universe as an infinitely complex mechanical system of interacting, discrete particles and separate objects. In this context, matter appears to be solid, inert, passive and unconscious; life, consciousness and creative intelligence are seen as insignificant accidents and derivatives of material development. They emerged after billions of years of random mechanical evolution of matter and only in a negligible section of an immense universe.

In contrast, the spiritual philosophies of the great ancient and

Eastern cultures—or “perennial philosophy”¹ as Aldous Huxley referred to them—describe consciousness and creative intelligence as primary attributes of existence, both transcendent and immanent in the phenomenal world. Western science recognizes as real only those phenomena that can be objectively observed and measured; perennial philosophy acknowledges an entire hierarchy of realities—some of them manifest, others hidden under ordinary circumstances and directly observable only in certain special states of consciousness.

Materialistic science and perennial philosophy differ most in their images of human nature. Western science portrays human beings as highly developed animals and thinking biological machines who have a fleeting, insignificant role in the overall scheme of things. Perennial philosophy sees humans as essentially commensurate with the entire universe and ultimately divine. Western science offers psychological and psychopharmacological assistance to people who have difficulties adjusting to the miserable predicament of human life. (Sigmund Freud, the founder of psychoanalysis, described the goal of successful psychotherapy as “changing the extreme suffering of the neurotic into the normal misery of human existence.”² But perennial philosophy offers a rich spectrum of spiritual techniques through which it is possible to recognize and experience one’s own divinity and achieve liberation from suffering.

Materialistic science has developed effective means of alleviating the most obvious forms of suffering—diseases, poverty and starvation—but has done very little for inner fulfillment and genuine emotional satisfaction. Increased material affluence has been associated with a dramatic increase of mental disorders, alcoholism, suicide rates, crime, and violence. On the other hand, perennial philosophy has offered inner liberation to a select few, but has failed to offer solutions for the urgent practical problems of everyday existence or to improve the external conditions of human life. These differences invite us to wonder if Western science and perennial wisdom could be reconciled in a way that would combine their advantages and avoid their drawbacks. Since it is not possible to change the ancient and perennial, any attempt at such synthesis must involve changes in the philosophy of Western science. But is it possible to change the basic assumptions of science while preserving its formidable pragmatic power? Do not the everyday triumphs of mechanistic science consti-

tute a clear proof of the accuracy of its basic philosophical assumptions?

One of the most important achievements of Western philosophy of science is the recognition that scientific theories are but conceptual models organizing the data about reality available at the time. As useful approximations to reality, they should not be mistaken for correct descriptions of reality itself. The relationship between theory and the reality which it describes is like that between a map and territory in Korzybski's sense;³ to confuse the two represents a violation of scientific thinking—a serious error in what is called logical typing. American anthropologist and generalist Gregory Bateson said that a person committing logical errors of this kind may one day eat the menu instead of the meal. Since it is always possible to formulate more than one theory accounting for the available data, the problem is to find a theory that would be broad enough to incorporate basic assumptions of perennial philosophy and yet preserve the pragmatic power of mechanistic science.

The concept of a *paradigm* is extremely useful here. Coined by the American physicist and historian of science Thomas Kuhn, author of the ground-breaking book *The Structure of Scientific Revolutions*, the term *paradigm* describes conceptual systems that dominate the thinking of scientific communities during certain specific periods of the evolution of science.⁴ Initially each new paradigm has a positive and progressive role. It identifies legitimate scientific problems, offers methodology for conducting scientific experiments, and describes criteria for evaluating the data. A paradigm clearly defines not only what reality is, but also what it is not and cannot possibly be. Once the paradigm is accepted, its basic philosophical assumptions are not questioned and scientists focus their attention and efforts on its further elaboration and articulation. However, continued research inevitably will produce data that are incompatible with the leading paradigm, since reality is always much more complicated than even the most sophisticated and complex scientific theory.

At first, all research challenging the dominant paradigm tends to be suppressed, because the current theories are mistaken for a true and exhaustive description of reality. Scientists who are under the spell of the leading paradigm have a strong conviction about the nature of reality. The scientist who generates controversial data is dis-

counted as inept, accused of cheating, or even labeled mentally ill. When the new data hold in subsequent experiments and are further confirmed by independent research, the discipline in question moves into a serious paradigm crisis that Kuhn calls a period of abnormal science. After attempts to create *ad hoc* hypotheses and conceptual adjustments fail, more and more courageous and fantastic theories are generated, and out of this chaos one of these alternatives finally emerges victorious as the new paradigm. In the history of science, this sequence of events is continuously repeated.

The old and the new paradigm typically represent entirely different and mutually incompatible world-views. Historical examples of major paradigm shifts are the transition from the geocentric astronomy of Ptolemaius to the heliocentric system of Copernicus and Galileo, from the phlogiston theory to the modern chemistry of Lavoisier, and, most recently, from the Newtonian mechanics to quantum-relativistic physics.

In the past 300 years, Western science has been dominated by the Newtonian-Cartesian paradigm. As Fritjof Capra outlined them in *The Tao of Physics*, the basic philosophical assumptions of this system of thought are derived from the ideas of Isaac Newton and René Descartes.⁵ Newton's mechanistic universe is a universe of solid matter made of fundamental building blocks or atoms, which are by definition indestructible.* They influence each other by forces of gravitation and interact according to fixed and unchangeable laws. Their interaction occurs in absolute space, which is three-dimensional, homogeneous, and independent of the presence of matter. Time in the Newtonian universe is uni-dimensional, flowing evenly from the past through the present to the future.

Newton's universe resembles a gigantic supermachine governed by linear chains of causes and effects. It is strictly deterministic: if we knew all the factors operating at present, we should be able to reconstruct accurately any situation in the past or predict any event in the future. Although this determinism cannot be scientifically proven and the complexity of the universe prevents its practical testing, it constitutes one of the cornerstones of mechanistic science.

To this Newtonian model, the French philosopher René Des-

*The Greek *a-tomos* is composed of the negative prefix *a-* and the verb *temnein*—to cut; it means that which cannot be cut or divided any further.

cartes contributed absolute dichotomy between matter (*res extensa*) and mind (*res cogitans*). According to Descartes, the universe exists objectively in the form in which a human observer would perceive it, but its existence is entirely independent of the process of observation.

These ideas of Isaac Newton and René Descartes became the foundations of Western mechanistic science and became the driving force behind the Scientific and Industrial Revolutions. The mechanistic model of the universe was so successful in its pragmatic technological applications that it became the ideal prototype of all scientific thinking, and was emulated by other disciplines, including psychology, psychiatry, sociology, anthropology, and related fields. Freud was a member of the so-called “Helmholtz Society,” whose explicit goal was to introduce into science the principles of Newtonian mechanics. While formulating psychoanalysis, Freud quite consciously and rigorously used the criteria of Newtonian thinking. The extreme example of this thinking is behaviorism—an attempt to eliminate the element of consciousness as a legitimate object of scientific interest and research, and to develop scientific psychology without the use of subjective introspective data.

The various scientific disciplines based on the mechanistic model have created an image of the universe as an infinitely complex assembly of passive, inert and unconscious matter, developing without any participation of creative intelligence. From the “Big Bang,” through the initial expansion of the galaxies, to the creation of the solar system and Earth, the cosmic processes were allegedly governed by blind mechanical forces. Organic matter and life were thought to have originated in the primeval ocean by accident through random chemical reactions. Similarly, the cellular organization of organic matter and the Darwinian evolution to higher life forms occurred quite mechanically without the participation of an intelligent principle—through genetic mutations and natural selection that guaranteed survival of the fittest.

Then somewhere very high in the evolutionary pedigree, consciousness emerged as a product of highly developed and organized matter, the central nervous system or brain. At a certain point of its development—not clearly identified by mechanistic science—matter, previously blind and inert, suddenly became aware of itself. Al-

though the mechanism involved in this miraculous event entirely escapes even the crudest attempts at speculation, it is taken for granted and represents a fundamental postulate of the materialistic and mechanistic world-view.

The belief that consciousness is a product of matter is not, of course, entirely arbitrary. It reflects a vast mass of observations, particularly from clinical and experimental neurology, showing clear connections between various conscious processes and physiological or pathological processes such as traumas, tumors or infections in the brain. Brain contusions, anaesthesia, or restriction of blood supply will lead to loss of consciousness. A temporal tumor is associated with changes of consciousness that are quite specific and different from those accompanying, for example, a prefrontal tumor. These connections are so consistent and predictable that they can be used in establishing neurological diagnosis. In some instances, the distortions of conscious processes can even be corrected by neurosurgery, pharmacotherapy, or other medical interventions.

Although close correlations between consciousness and cerebral structures or processes have been established beyond any reasonable doubt, mechanistic science tends to misinterpret correlation for cause. The logical inconsistency of its conclusions is analogous to a faulty conclusion that, for example, television programming is caused by components of the TV set. A knowledgeable TV mechanic can correct problems with the picture or sound by repairing the TV components. But since television is a human-made invention, none of us would see these repairs as scientific proof that the program must be, therefore, generated by the components. It simply means that the integrity of the set is a necessary prerequisite for the integrity of sound and picture. To conclude otherwise is to mistake connection for cause, but this is the kind of faulty conclusion that mechanistic science draws from neurological findings. It is worth mention here that in his last book *Mystery of The Mind*, pioneering neurosurgeon Wilder Penfield expressed deep disbelief that consciousness is a product of the brain and can be explained in terms of neurophysiology.⁶

Materialistic psychology explains mental processes as reactions of the organism to the environment and/or recombinations of previous sensory input stored in the brain. In this it adheres to John Locke's

empiricist credo that “*nihil est in intellectu quod non antea fuerit in sensu.*” (There is nothing in the mind that was not previously in the senses.) Memories of any kind have to have a specific material substrate—the cells of the central nervous system or the physiochemical code of the genes. Access to any new information is possible only through direct sensory input or through combination of old and newly acquired data. Mechanistic science thus tries to explain even such phenomena as human intelligence, creativity, art, religion, ethics, and science itself as products of material processes in the brain. But the probability of human intelligence developing all the way from the chemical ooze in the primeval ocean to its present stage solely through random mechanical processes has been aptly compared to the probability of a tornado blowing through a gigantic junkyard and assembling by accident a 747 Jumbo-jet.

In the reductionistic world-view of mechanistic and materialistic science, there is no place for mysticism and religion. Spirituality is seen as a sign of primitive superstition, intellectual and emotional immaturity, or even severe psychopathology that science will one day explain in terms of deviant biochemical processes in the brain. Mainstream psychoanalysis, for example, interprets unitive and oceanic states of the mystics as a regression to primary narcissism and infantile helplessness, and it interprets religion as an obsessive-compulsive neurosis of humanity.⁸ Psychoanalyst Franz Alexander described the states achieved by Buddhist meditation as self-induced catatonia.⁹ Western anthropologists see shamans as mentally ill who suffer from schizophrenia or epilepsy, and refer to the initiatory experiences that mark the onset of the career of many shamans as “shamanic illness.” The report of the Group for the Advancement of Psychiatry interpreted mysticism as an intermediate phenomenon between normality and psychosis.¹⁰

Although Newtonian-Cartesian science has acquired great prestige, the mechanistic paradigm, once a progressive and powerful tool for science, has become a strait-jacket, seriously impeding further evolution of human knowledge.

A paradigm is more than just a useful theoretical model for science; its philosophy has a powerful indirect influence on society. Newtonian-Cartesian science has created a very negative image of human beings, depicting them as biological machines driven by bes-

tial instinctual impulses. This image endorses competition and the principle of "survival of the fittest" as natural and essentially healthy tendencies. Contemporary science, blinded by its model of the world as a conglomerate of mechanically interacting separate units, has been unable to recognize the vital importance of cooperation, synergy, and ecological concerns. Technological achievements that have the potential to solve most of the problems plaguing humanity—nuclear energy, lasers, space age rocketry, cybernetics, and the miracles of modern chemistry and bacteriology—have turned into menaces.

In the last decades, the authority of mechanistic science has also been undermined from within. As Fritjof Capra demonstrated in *The Tao of Physics* and *The Turning Point*, developments in the twentieth century physics have questioned and transcended every postulate of the Newtonian-Cartesian model. Astonishing explorations of both the macro-world and the micro-world have created an image of reality which is entirely different from the seventeenth century model used by mechanistic science. The myth of solid and indestructible matter, its central dogma, disintegrated under the impact of experimental and theoretical evidence that the fundamental building blocks of the universe—the atoms—were essentially empty. Subatomic particles showed the same paradoxical nature as light, manifesting either particle properties or wave properties depending on the arrangement of the experiment. The world of substance was replaced by that of process, event, and relation. In subatomic analysis, solid Newtonian matter disappeared. What remained were activity, form, abstract order, and pattern. In the words of the famous mathematician and physicist Sir James Jeans, the universe began to look less like a machine and more like a thought system.¹¹

Newton's three-dimensional space and uni-dimensional time were replaced by Einstein's four-dimensional continuum of space-time. In new physics, the objective world cannot be separated from the observer, and linear causality is not the only and mandatory connecting principle in the cosmos. The universe of modern physics is not the gigantic mechanical clockwork of Newton, but a unified network of events and relations. Prominent modern scientists Eugene Wigner, David Bohm, Geoffrey Chew, Edward Walker, Gregory Bateson, Fritjof Capra, and Arthur Young believe that mind, intelli-

gence, and possibly consciousness are integral parts of existence rather than insignificant products of matter.¹²

Although quantum-relativistic physics provides the most convincing and radical critique of the mechanistic world-view, important revisions have been inspired by various avenues of research in other hard sciences. Scientific thinking has also been changed by developments in cybernetics, information theory, systems theory and the theory of logical types. According to Gregory Bateson, thinking in terms of substance and discrete objects represents a serious epistemological mistake—error in logical typing.* In everyday life, we deal not with objects but with their sensory transforms or with messages about differences; in Korzybski's sense, we have access to maps, not the territory. Information, difference, form and pattern that constitute our knowledge of the world are dimensionless entities that cannot be located in space or time. Information flows in circuits that transcend the conventional boundaries of the individual and include the environment. This way of scientific thinking makes it absurd to treat the world in terms of separate objects and entities; to see the individual, family or species as the Darwinian units of survival; to draw distinctions between mind and body; or to identify with the ego-body unit (Alan Watts' "skin-encapsulated ego"). Emphasis has shifted from substance and object to form, pattern and process.[†]

Systems theory has made it possible to formulate a new definition of the mind. This theory holds that any constellation of events that has the appropriate complexity of closed causal circuits and the appropriate energy relations will show mental characteristics, i. e., respond to difference, process information, and be self-corrective. In this sense, cells, tissues, and organs of the body; a cultural group or

*Most important aspects of this criticism of mechanistic science can be found in Gregory Bateson's *Steps To an Ecology of Mind* and *Mind and Nature: A Necessary Unity*.

[†]This conceptual conflict between mechanistic science and the modern revolutionary developments represents a replica of the ancient conflict between major schools of Greek philosophy. The Ionic school—Thales of Miletos, Anaximenes, Anaximandros and others—considered the basic philosophical question to be "What is the world made of?", "What is its basic substance?" In contrast, Plato and Pythagoras believed that the critical issue is its form, patterning and order. Modern science is distinctly neo-Platonic and neo-Pythagorean.

nation; an ecological system; or even the entire planet (Gaia theory) can be said to have mental characteristics. And when we consider a larger mind that integrates all the hierarchies of the lower ones, even a critical and skeptical scientist like Gregory Bateson has to admit that this concept comes close to that of an immanent God.

Another profound criticism of mechanistic science has emerged from the work of the Nobel laureate Ilya Prigogine and his colleagues in Brussels and in Austin, Texas.¹³ Traditional science depicts life as a specific, rare, and ultimately futile process—an insignificant and accidental anomaly involved in a Don Quixotean struggle against the absolute dictate of the second law of thermodynamics. This gloomy picture of the universe, dominated by an all-powerful tendency toward increasing randomness and entropy, and moving relentlessly toward a thermal death, belongs now to the history of science. It was dispelled by Prigogine's study of the so-called "dissipative structures"* in certain chemical reactions and his discovery of their underlying principle—"order through fluctuation." Further research revealed that this principle is not limited to chemical processes but represents a basic mechanism of evolution in all domains—from atoms to galaxies, and from individual cells to human beings, and further to societies and cultures.

These observations enable a unified view of evolution in which the unifying principle is not the steady state, but the dynamic conditions of the non-equilibrium systems. Open systems on all levels and in all the domains are carriers of an over-all evolution which ensures that life will continue to ever newer and dynamic complexity. Whenever systems in any domain become stifled by past entropy production, they mutate toward new regimes. The same energy and the same principles thus carry evolution on all the levels, whether it involves matter, vital forces, information, or mental processes. Micro- and macro- cosmos are two aspects of the same unified and unifying evolution. Life is not seen any longer as a phenomenon unfolding in an inanimate universe; the universe itself becomes increasingly alive.

*"Dissipative structures" derive their name from the fact that they maintain continuous entropy production and dissipate the accruing entropy by exchange with the environment. The most famous example is the so-called Belousov-Zhabotinski reaction, which involves oxidation of malonic acid by bromate in a sulphuric acid solution in the presence of cerium, iron, or manganese ions.

Although the simplest level on which self-organization can be studied is the level of dissipative structures which form in self-renewing chemical reaction systems, applying these principles to biological, psychological and socio-cultural phenomena does not involve reductionistic thinking. Unlike the reductionism of mechanistic science, such applications are based on fundamental homology, on the relatedness of the self-organizing dynamics on many levels.

From this point of view, humans are not higher than other living organisms; rather, they live simultaneously on more levels than life forms that appeared earlier in evolution. Here science has rediscovered a truth of perennial philosophy: the evolution of humanity forms an integral and meaningful part of universal evolution. Humans are important agents in this evolution; rather than helpless subjects of evolution, they *are* evolution. Like quantum-relativistic physics, this new science of becoming, replacing the old science of being, shifts emphasis from substance to process. In this context, structure is an incidental product of interacting processes, and, in Erich Jantsch's words, it is no more solid than a standing wave pattern in the confluence of two rivers or the grin of a Cheshire cat.*

The latest serious challenge to mechanistic thinking is the theory of British biologist and biochemist Rupert Sheldrake, expounded in his revolutionary *A New Science of Life*.¹⁴ Sheldrake has offered a brilliant critique of how mechanistic science explains morphogenesis during individual development and evolution of species, genetics, and instinctual and more complex forms of behavior. Mechanistic science considers only the quantitative aspect of phenomena, which Sheldrake calls "energetic causation." It has nothing to say about the qualitative aspect—the development of forms or the "formative causation." According to Sheldrake, living organisms are not just complex biological machines, and life cannot be reduced to chemical reactions. Form, development and behavior of organisms are shaped by morphogenetic fields of a type that at present is not recognized by physics. These fields are molded by the form and behavior of past organisms of the same species through direct connections across both space and time. These fields show cumulative properties; if a certain number of members of a species develop certain organismic

*See Erich Jantsch's *Design For Evolution* (Braziller, New York, 1975) and *The Self-Organizing Universe* (Pergamon Press, New York 1980) for further information.

properties or learn a specific form of behavior, these are automatically acquired by other members of the species, even if there exist no conventional forms of contact between them. The phenomenon of “morphic resonance,” as Sheldrake calls it, is not limited to living organisms and can be seen in such elementary phenomena as the growth of crystals.

However implausible and absurd this theory might appear to a mechanistically oriented mind, it is testable. Even at present, in its early stages, it is supported by experiments with rats and observations of monkeys.* Sheldrake is aware that his theory has far-reaching implications for psychology and has discussed its relationship to Jung’s concept of the collective unconscious.

Another dramatic revision of the mechanistic world-view is the holonomic theory of the universe formulated by David Bohm, former coworker of Albert Einstein and author of basic texts on both relativity theory and quantum physics. According to Bohm, the phenomenal world that we observe in our ordinary states of consciousness represents only one aspect of reality—the explicate or unfolded order. Its generative matrix—the implicate or enfolded order—exists on another level of reality and cannot be directly observed, except possibly in episodes of non-ordinary consciousness, such as deep meditative, mystical or psychedelic states. Like many other famous physicists, including Niels Bohr, Erwin Schroedinger, Robert Oppenheimer, and Albert Einstein, Bohm finds modern physics compatible with the mystical world-view.¹⁵

The famous neurosurgeon Karl Pribram has developed a new model of the brain that in the future might converge with Bohm’s theory of holomovement.¹⁶ Pribram was able to demonstrate that, in addition to digital processing, the brain also performs parallel processing which involves holographic principles. Pribram’s model not only explains a number of otherwise puzzling aspects of the brain function, but opens entirely new perspectives for speculations

*The most famous example is the anecdotal observation reported by Lyall Watson in *Lifetide* (Bantam Books, New York, 1980), and referred to as the “hundredth monkey phenomenon.” When a young female Japanese monkey (*Macaca fuscata*) on the island Koshima learned an entirely new behavior—washing raw sweet potatoes covered with sand and grit—this behavior was not only transmitted to her immediate peers, but appeared in monkeys on neighboring islands when the number of monkeys reached a certain critical number.

about mystical and psychedelic states, parapsychological phenomena, spiritual healing, and many other problem areas that were previously excluded from serious scientific inquiry. Although it is at this point premature to talk about an integrated holonomic theory of the universe and of the brain, it is very exciting that both approaches are using similar and compatible explanatory principles.

This discussion of new and promising developments in science would not be complete without mention of the work of Arthur Young. His theory of process is a serious candidate for a scientific metaparadigm of the future. It organizes and interprets in a most comprehensive way the data from a variety of disciplines—geometry, quantum theory, theories of relativity, chemistry, biology, botany, zoology, history, psychology, and mythology—and integrates them into an all-encompassing cosmological vision. Young's model of the universe has four levels defined by degrees of freedom and of restraint, and seven consecutive stages: light, nuclear particles, atoms, molecules, plants, animals, and humans. Young was able to discover a basic pattern of the universal process that repeats itself continuously on different levels of evolution in nature. The explanatory power of this metaparadigm is complemented by its predictive power. Like Mendeleev's periodic table of elements, it is capable of predicting natural phenomena and their specific aspects.

By assigning a critical role in the universe to light and the purposeful influence of the quantum action, Young made it possible to bridge the gap between science, mythology, and perennial philosophy. His metaparadigm is not only consistent with the best of science, but it is also capable of dealing with non-objective and non-definable aspects of reality far beyond accepted limits of science. Since it is not possible to do justice to Young's theory without detailed excursions into a variety of disciplines, those who are interested in this approach are referred to his original writings.

Although it is not yet possible to integrate the various revolutionary developments in modern science discussed here into a cohesive and comprehensive new paradigm, they all seem to have one thing in common: their proponents share a deep belief that the mechanistic image of the universe created by Newtonian-Cartesian science is no longer an accurate and mandatory description of reality. By far the most far-reaching challenges to the Newtonian-Cartesian para-

digm have emerged in the fields of depth psychology and modern consciousness research. As the authority of mechanistic science is collapsing, serious researchers are rediscovering and re-evaluating a broad spectrum of data that in the past have been suppressed or even ridiculed because of their incompatibility with the old paradigm. At the same time, vast amounts of new revolutionary observations are being generated by laboratory consciousness research, psychedelic therapy, experiential psychotherapies, field anthropology, parapsychology, and thanatology.

Parapsychological researchers Joseph Banks Rhine, Gardner Murphy, Stanley Krippner, Jules Eisenbud, Charles Tart, Elmer and Alyce Green, Arthur Hastings, Russell Targ, and Harold Puthoff have done meticulous scientific work that suggests the existence of telepathy, remote viewing, psychic diagnosis and healing, Poltergeist, or psychokinesis. This avenue of research has attracted the attention of modern physicists and it has become a serious theoretical challenge to incorporate its findings into the new paradigm.

Another major area of psychology that challenges the Newtonian-Cartesian paradigm and is receiving increasing scientific recognition is Jung's work. The two dominant orientations in Western psychology, behaviorism and Freudian psychoanalysis, have created mechanistic models of the psyche: behaviorism in its extreme form attempts to exclude consciousness from psychology and to reduce mental functioning to reflex activity and to the stimulus-response principle, and Freudian psychoanalysis sees psychological phenomena as derivatives of base instincts and biological functions. But Jung discovered the collective unconscious, myth-forming properties and far-reaching healing potentials of the psyche, and the existence of archetypes—transindividual dynamic patterns in the psyche that not only transcend the boundaries of the individual, but represent an interface between consciousness and matter (psychoids).¹⁸ Whereas Freud's individual unconscious is an inferno of instinctual forces and suppressed and rejected psychological tendencies, Jung's psychology returns the cosmic status to the psyche and re-introduces spirituality into psychiatry.¹⁹ Unlike Freud, who tried all through his life to raise the prestige of psychology by reducing it to Newtonian mechanics, Jung was aware that his findings were incompatible with the existing philosophy of science and required an entirely new para-

digm. He followed developments in quantum-relativistic physics with great interest and was deeply influenced by his personal interactions with Wolfgang Pauli and Albert Einstein.²⁰

Several decades of psychedelic research have also generated data of critical importance for the new paradigm. Various cultural groups throughout the world have long used plants with powerful psychedelic properties for ritual and healing purposes. The legendary plant and potion *soma* played a critical role in the development of Vedic religion and philosophy. Pre-Columbian Central American cultures used a broad spectrum of psychedelic plants; the best known of these are the Mexican cactus *peyote*, the sacred mushrooms *teonanacatl*, and the morning glory seeds, or *ololiuqui*. South American Indians of the Amazon have used for centuries decoctions from the jungle liana *yagé* or *ayahuasca*. In Africa, many tribes know the secret of the psychedelic plant *eboga* and ingest it in smaller doses as a stimulant, and in larger amounts as a sacrament in their rituals. The tomb of a shaman found during the excavations of the New Stone Age settlement from the sixth millennium B.C. in Catal Hüyük in Turkey contained plants that according to pollen analysis were specimens with psychedelic properties. Preparations from several varieties of hemp have been smoked and ingested under various names (hashish, charas, bhang, ganja, kif, marijuana) in the Oriental countries, in Africa, and in the Caribbean area for recreation, pleasure, healing, and ritual purposes. They have been important sacraments for such diverse groups as the Indian Brahmans, several orders of the sufis, African natives, ancient Skythians, and the Jamaican Rastafarians. According to recent research, ergot alkaloids similar to LSD were used in the famous Eleusinian mysteries in ancient Greece. Both Plato and Aristotle were initiates of these mysteries and their systems of thought were deeply influenced by their experiences in them.²¹ Swiss chemist Albert Hofmann's sensational discovery of the semi-synthetic psychedelic LSD inspired a wave of interest in psychopharmacology.²² The alkaloids responsible for the effects of most of the above sacred plants have now been isolated in pure form as mesacaline, psilocybine, psilocin, lysergamid, bufotenin, dimethyl-tryptamine, tetrahydrocannabinol, harmin, and ibogain.

It has become evident that the Western model of psyche, with its narrow biographical orientation, is inadequate to account for a wide

spectrum of phenomena occurring in psychedelic states. Under the catalyzing influence of these remarkable psychoactive drugs, experimental subjects have experienced not only autobiographical sequences, but also powerful confrontations with birth and death, and an entire gamut of phenomena that have been named “transpersonal.” The rediscovery of these experiences and the recognition of their heuristic relevance has been one of the major incentives for the development of a new movement in psychology—the transpersonal orientation.²³

In the ordinary state of consciousness, a person is expected to identify experientially with his or her body image, to be Alan Watts’ “skin-encapsulated ego.” It is generally possible to experience with all the sensory qualities only the present moment and the present location. Recall of the past is without the sensory vividness of the present moment, and experiencing the future is considered absurd and impossible in principle. Perception of the here and now is limited by the sensory organs’ physical and physiological characteristics.

In transpersonal experiences, one, two, or more of the above limitations appear to be transcended. The sense of one’s identity can expand beyond the body image and encompass other people, groups of people, or all of humanity. It can transcend the human boundaries and include animals, plants, or even inanimate objects and processes. Events that occurred in personal, ancestral, racial, phylogenetic, geological or astronomical history, and even future events can be experienced with vividness ordinarily reserved only for the present moment and location. In the extremes, one can experientially identify with the whole planet or the entire cosmos at various points of their development.

Experiences of this kind can bring instant intuitive knowledge that by far exceeds the intellectual capacity and educational background of the individual. While consciously identifying with another person, one can gain access to that person’s thoughts, feelings, physical sensations, or memories. During episodes of animal identification, one can have detailed insights into animal psychology, instinctual dynamics, reproductive cycles, or courtship dances of the species involved. Plant experiences can similarly mediate new and accurate insights into botanical processes such as photosynthesis, sprouting of seeds, growth, pollination, or exchange of minerals and water in the

root system. The same is occasionally true for inorganic processes, such as birth and death of stars, subatomic events, and dynamics of cyclones or volcanic eruptions. Racial memories in the Jungian sense or past incarnation experiences are frequently associated with new information about cultures and historical periods, their architecture, costumes, weaponry, religious rituals, or social structure. Similarly, the content of ESP experiences such as precognition, clairvoyance, or astral projection can frequently be independently confirmed as accurately reflecting reality.

It is even more remarkable that experiences accurately portraying various aspects of the phenomenal world can alternate in unusual states of consciousness with experiences that have no basis in what is called in the West "objective reality" such as archetypal visions of deities or demons and mythological sequences from different cultures. Even these experiences can impart entirely new information; they reflect accurately, and frequently in great detail, the mythologies of the cultures involved. The nature and quality of this information is typically far beyond the educational level or even intellectual capacity of the individual involved. Some of the most encompassing transpersonal experiences are of a cosmic and transcendental nature; here belongs identification with the Universal Mind or Cosmic Consciousness (Sachidananda) or the experience of the Supracosmic and Metacosmic Void (Sunyata).

Transpersonal experiences are not limited to psychedelic states. They occur in new experiential psychotherapies such as neo-Reichian approaches, primal therapy, psychosynthesis, Gestalt practice, marathon sessions, and various forms of rebirthing. They are particularly frequent in the process of holonomic integration developed by my wife Christina and myself.²⁴ It is a technique that combines controlled breathing with evocative music and focused body work. That many spiritual practices can induce transpersonal experiences is now being confirmed by an increasing number of Westerners who experiment with transcendental meditation, Zen practice, Tibetan psychoenergetic exercises, or forms of yoga.

The new understanding of transpersonal phenomena mediated deep insights into an important subcategory of non-ordinary states of consciousness labeled and treated by Western science as psychotic and thus indicative of mental disease. These can now be interpreted

as “spiritual emergencies” or “transpersonal crises”; if properly treated, they can result in psychosomatic healing, personality transformation, and consciousness evolution. Ancient and Eastern cultures have not only developed elaborate cartographies for these states, but also have powerful techniques to induce them. Various rites of passage of aboriginal cultures, ancient death-rebirth mysteries, spiritual healing ceremonies, shamanic practices and secret initiations are salient examples.²⁵

Various transpersonal phenomena have also been described in the context of non-drug laboratory techniques of consciousness alteration such as biofeedback, developed by Elmer and Alyce Green, Barbara Brown, Joe Kamiya and others; sensory isolation and sensory overload; use of various kinaesthetic devices such as the “witches cradle”; use of non-authoritative forms of hypnosis; and the “mind games” developed by Jean Houston and Robert Masters.²⁶

Another important source of fascinating data about transpersonal experiences is the young discipline of thanatology, the study of death and dying. Clinical observations of people who are near death and those who have died and been resuscitated confirm essentially the descriptions of death in spiritual literature, particularly from the ancient books of the dead such as *The Tibetan Bardo Thödöl*, the Egyptian *Pert em Hru*, and the European *Ars moriendi* or *Art of Dying*.²⁷ The original data collected by Karlis Osis in *Death-Bed Observations of Physicians and Nurses*,²⁸ Raymond Moody in *Life After Life*,²⁹ and Elisabeth Kübler-Ross are now being confirmed by more systematic studies such as Kenneth Ring’s *Life At Death*,³⁰ and American cardiologist Michael Sabom’s *Recollections of Death*.³¹ Sabom used a careful scientific approach to re-examine the claims of previous studies and ancient books of the dead that, following clinical death, many people have out-of-the-body experiences in which they accurately perceive near or remote events. He was able to confirm that these people describe in many instances minute details of the circumstances following their deaths, including the use of specific interventions and esoteric gadgets that are not commonly known to laymen. It would be difficult to come up with a more dramatic example of a critical challenge to the Newtonian-Cartesian mechanistic science and its interpretation of the relationship between

consciousness and the brain than a situation involving a clinically dead person, lying on the back with the eyes closed and witnessing accurately the events in the room from the vantage point of the ceiling, or even events occurring in another room of the building, or in a remote location.

The most exciting aspect of all the above revolutionary developments in modern Western science—astronomy, physics, biology, medicine, information and systems theory, depth psychology, parapsychology and consciousness research—is the fact that the new image of the universe and of human nature increasingly resembles that of the ancient and Eastern spiritual philosophies—the different systems of yoga, the Tibetan Vajrayana, Kashmir Shaivism, Zen Buddhism, Taoism, Kabbalah, Christian mysticism, or gnosticism. It seems that we are approaching a phenomenal synthesis of the ancient and the modern and a far-reaching integration of the great achievements of the East and the West that might have profound consequences for the life on this planet.

REFERENCES

1. HUXLEY, A. *Perennial Philosophy*. London: Fontana, 1958.
2. FREUD, S. *Civilization and Its Discontents*. New York: Norton Press, 1962.
3. KORZYBSKI, A. *Science and Sanity: An Introduction to Non-Aristotelian Systems and General Semantics*. Lakeville, Conn.: The International Non-Aristotelian Library Publ. Co., 1933.
4. KUHN, T. *The Structure of Scientific Revolutions*. Chicago, Ill.: University of Chicago Press, 1962.
5. CAPRA, F. *The Tao of Physics*. Berkeley, CA.: Shambhala Publications, 1975. See also Capra, F. *The Turning Point*. New York: Simon & Schuster, 1982.
6. PENFIELD, W. *The Mystery of the Mind*. Princeton, N.J.: Princeton University Press, 1976.
7. LOCKE, J. "An Essay Concerning Human Understanding." In *The Works of John Locke*. London: T. Tegg, 1823.
8. FREUD, S. "Obsessive Acts and Religious Practices." *Collected Papers*, vol. 6, Institute of Psychoanalysis, Hogarth Press, London, 1924.

9. ALEXANDER, F. "Buddhist Training As Artificial Catatonia." *Psychoanalyt. Rev.* 18 (1931): 129.
10. Group for the Advancement of Psychiatry, Committee on Psychiatry and Religion: "*Mysticism: Spiritual Quest or Psychic Disorder?*" Washington, D.C., 1976.
11. JEANS, J. *The Mysterious Universe*. New York: Macmillan, 1930.
12. See WIGNER, E. *Symmetries and Reflections*. Bloomington, Ind.: Indiana University Press, 1967; CHEW, G.F. "Bootstrap: A Scientific Idea?" *Science* 161 (1968): 762; BOHM, D. *Wholeness and the Implicate Order*. London: Routledge and Kegan, 1980; WALKER, E.H. "The Nature of Consciousness." *Mathemat. Biosciences* 7 (1970): 138; BATESON, G. *Mind and Nature: A Necessary Unity*. New York: E.P. DUTTON, 1979; and BATESON, G. *Steps to An Ecology of Mind*. San Francisco, CA.: Chandler Publications, 1972; CAPRA. op. cit.; and YOUNG, A.M. *The Geometry of Meaning*. New York: Delacorte Press, 1976.
13. PRIGOGINE, I. *From Being to Becoming: Time and Complexity in the Physical Sciences*. San Francisco, CA.: W.H. Freeman and Co., 1980.
14. SHELDRAKE, R. *A New Science of Life: The Hypothesis of Formative Causation*. Los Angeles, CA.: J.P. Tarcher, 1981.
15. See BOHM. op. cit.
16. PRIBRAM, K. *Languages of the Brain*. Englewood Cliffs, N.J.: Prentice-Hall, 1971. See also PRIBRAM, K. "Non-Locality and Localization: A Review of the Place of the Holographic Hypothesis of Brain Function in Perception and Memory." Preprint for the Tenth ICUS, November 1981.
17. See YOUNG. op. cit.
18. JUNG, C.G. "On the Nature of the Psyche." *Collected Works*, vol. 8, Bollingen Series XX. Princeton, N.J.: Princeton University Press, 1960.
19. JUNG C.G. "*Symbols of Transformation*." *Collected Works* vol. 5., Bollingen Series XX. Princeton, N.J.: Princeton University Press, 1956.
20. See PAULI, W. "The Influence of Archetypal Ideas on the Scientific Theories of Kepler." In *The Interpretation of Nature and the Psyche*. Bollingen Series LI. New York: Pantheon Books, 1955.
21. See WASSON, R.G. et al. *The Road to Eleusis: Unveiling the Secrets of the Mysteries*. New York: Harcourt, Brace Jovanovich, 1978; Croissant, J.: *Aristôte et les mystères*. Faculté de Philosophie et Lettres, Liège, 1932; and Plato, "Phaedrus." In *The Collected Dialogues of Plato*. Bollingen Series LXXI. Princeton, N.J.: Princeton University Press, 1961.
22. HOFMANN, A. "The Chemistry of LSD and Its Modifications." In

D.V. SIVASANKAR et al. *LSD: A Total Study*. Westbury, N.Y.: PJD Publications Ltd., 1975.

23. Sutich, A. "The Emergence of the Transpersonal Orientation: A Personal Account." *J. transpersonal Psychol.* 8 (1976): 5.
24. GROF, S. *Journeys Beyond the Brain*. Manuscript pending publication.
25. GROF, S., GROF, C.: *The Concept of Spiritual Emergency: Understanding and Treatment of Transpersonal Crises*. Mimeographed manuscript. See also GROF, S. HALIFAX, J.: *The Human Encounter with Death*. New York: E. P. Dutton, 1977 and GROF, S., GROF, C., *Beyond Death*. London: Thames and Hudson, 1980.
26. MASTERS, R.E.L., Houston, J. *Mind Games: The Guide to Inner Space*. New York: Dell Publ. Co., 1972.
27. See RAINER, R. *Ars Moriendi: Von der Kunst des heilsamen Lebens und Sterbens*. Koeln, Graz: Boehlav Verlag, 1957.
28. New York: Parapsychology Foundation, 1961.
29. Atlanta, GA.: Mockingbird Press, 1975.
30. New York: Coward, McCann, & Geoghegan, 1980.
31. New York: Harper & Row, 1981.