THE ONE AND THE MANY

'*See all things, not in process of becoming, but in being and see themselves in the other. Each being contains in itself the whole intelligible world. Therefore, All is truly everywhere. Each is their All, and All is each.*'

Plotinus

Unity and Multiplicity

Throughout the ages and across cultures various terms have been employed to describe the Ultimate Reality or First Principle underlying the phenomenal world:

- Great Spirit, God, Ein Sof, Brahman, Tao, Buddha Nature
- Absolute, All and Everything, Timeless Existence
- Source, Noumenon, Ground of Being, Womb of Life
- Void, Unmanifest, Emptiness, Nothingness, Stillness, Silence
- Being, Self, Presence, Pure Awareness, Nondual Consciousness, Suchness, Isness

The essential meaning of 'the One and the Many' has also been expressed and defined in more comprehensive conceptual terms:

- Gurdjieff: "Under the surface of things is hidden the oneness of all that exists. The phenomenal world changes according to time and place, but unity, oneness, is eternal and unchanging."
- Indian sage Ramana Maharshi: "The many change and pass away, whereas the One always endures."
- Transpersonal psychologist Jeffrey Eisen: "Oneness is the potential from which all things emerge, to which all things return, which all things eternally are."
- Philosopher Ananda Coomaraswamy: "There is an incessant multiplication of the in-exhaustible One and unification of the indefinitely Many. Such are the beginnings and endings of worlds and of individual beings expanded from a point without position or dimensions and a now without date or duration."

Ultimately, Oneness is the one immutable reality, bridging all dimensions of the universe. Jeffrey Eisen: "Oneness and duality, reality and illusion unify such fundamental concepts as consciousness, perception, evolution, time, space, and being."

> Oneness is the great inferential. In one sense we know it is there, it must be there, yet there is no way of getting primary information about it, no way of knowing it. Sometimes the idea that there is only Oneness and everything is connected seems improbable, a mystical construct. Other times it seems self-evident, a palpable reality, a truism so real that it shines out every place one looks. What is this level on which all things are connected, on which all things are one? Call it the level of *being*. No matter how extensive the differences between things are, everything exists, everything is in a state of being. Existence, being, forms a continuum, inhabits a common dimension, saturates all possible dimensions, is all-inclusive, universal. (1)

Monism, derived from the Greek *monos* (which means one, alone or unique), is a school of philosophy which regards everything in existence as a unified whole. It asserts that Oneness, not separation and distinction, is the basis of reality. Unity is the opposite of duality. The attributes of Oneness (ineffable, unknowable, undifferentiated, all-encompassing, aperceptual, timeless) contrast with the qualities of duality (experienced, knowable, differentiated, localized, perceptual, time-bound).

In fact, there is no wholeness without the appearance of diversity. Wholeness expresses itself as the amazing diversity and multiplicity of life. Unity and duality co-exist, similar to a perceptual illusion in which two possible images can be alternately perceived depending on the perceptual viewpoint. Examples are a cube which can be simultaneously perceived from above or below and the silhouette of a face that can be viewed either as a young girl or an elderly woman:

> The relationship between Oneness and duality is wholly a matter of perception. Whenever there is perception, Oneness divides into a perceiver and a perceived, a subject and an object. In other words, Oneness becomes dual. Oneness and duality are the same thing from different points of view; as are reality and illusion. More precisely, duality and illusion arise from any and all points of view, whereas Oneness and reality exist only from no point of view. A point of view is a necessary condition for perception. Perception without a point of view is as contradictory as and meaningless as perception without a perceiver. If reality exists only from no point of view, it is by definition unknowable (i.e. not perceivable). In that case, what can reality mean? The dualism engendered by the sheer act of perception is an unbreachable wall, an irreducible fact, an impenetrable illusion that limits the human condition and, in fact, the condition of all bounded entities. (2)

Scientists and mystics both recognize the existence of an underlying unity supporting the myriad phenomena of the universe. In *No Boundary*, Ken Wilber speaks to the confluence of Western and Eastern ideas:

> When the physicist or Eastern sage says that all things are void, or all things are non-dual, or all things are interpenetrating, he does not mean to deny differences, to overlook individuality, to see the world as homogeneous. The world contains all types of features and surfaces and lines, but they are all interwoven into a seamless field. Look at it this way; your hand is surely different from your head, and your head is different from your feet, and your feet are different from your ears. But we have no difficulty at all recognizing that they are all members of one body, and likewise, your one body expresses itself in all its various parts. All-in-one and one-in-All. All things and events are equally members of one body, the Dharmakaya, the mystical body of Christ, the universal field of Brahman, the organic pattern of the Tao. Any physicist will tell you that all objects in the cosmos are simply various forms of a single Energy. (3)

Mystical Experience of Oneness

During the Apollo 14 space mission in 1971, astronaut Ed Mitchell experienced a deeply profound mystical experience in which he perceived the all-encompassing unity of all that exists:

> It was then, while staring out of the window, that Ed experienced the strangest feeling he would ever have: a feeling of *connectedness*, as if all the planets and all the people of all times were attached by some invisible web. He could hardly breathe from the majesty of the moment . . . There seemed to be an enormous force field here, connecting all people, their intentions and thoughts, and every animate and inanimate form of matter for all time. Anything he did or thought would influence the rest of the cosmos, and every occurrence in the cosmos would have a similar effect on him. Time was just an artificial construct. Everything he had been taught about the universe and the separateness of people and things felt wrong. There were no accidents or individual intentions. The natural intelligence that had gone on for billions of years, that had forged the very molecules of his being, was also responsible for his own present journey. This was an overwhelming visceral feeling, as though he was physically extending out of the window to the very furthest reaches of the cosmos. It felt like a blinding epiphany of meaning – what the Eastern religions often term an 'ecstasy of unity.' (4)

A century earlier, two progressive American thinkers and writers – Ralph Waldo Emerson and Walt Whitman – eloquently captured in words the sense of a unified whole permeating all

of creation. In his important essay "The Over-soul," Emerson places each human being within the context of an all-encompassing unity:

> We live in succession, in division, in parts, in particles. In the meantime, within man is the soul of the whole: the wise silence, the universal beauty, to which every part and particle is equally related, the eternal ONE. And this deep power in which we exist and whose beatitude is all accessible to us, is not only self-sufficing and perfect in every hour, but the act of seeing and the thing seen, the seer and the spectacle, the subject and the object, are one. We see the world piece by piece, as the sun, the moon, the animal, the tree; but the whole, of which these are shining parts, is the soul. (5)

The sense of unity and wholeness underlying the phenomenal world was also expressed in poetic form by Walt Whitman:

> A vast similitude interlocks all . . .
> All souls, all living bodies, though they be ever so different . . .
> All identities that have existed or may exist on this globe, or any other globe,
> All lives, and deaths, all of the past, present, future,
> This vast similitude spans them, and always has spanned,
> And shall forever span them and compactly hold and enclose them. (6)

Ultimately, oneness cannot be described conceptually; it can only be experienced: the eye cannot see itself. Oneness can be directly experienced as pure, nondual consciousness. Throughout the ages, shamans, psychics and other 'sensitives' have entered altered states of consciousness, which allowed them to directly perceive unity and wholeness:

> Mystics and psychics say that when one is being in the world of the One, the Unity, one does not judge, one only observes and *is*. Since – from this viewpoint – everything flows into everything else, one observes and is a part of the total harmony of the All, the cosmos, and in this great harmony, nothing is superfluous or disharmonious. If a single event or entity did not exist, the total harmony would be destroyed. It is only by including everything that the total being is possible. The Italian playwright Ugo Betti put it: "If there were one drop of water less in the universe, the whole world would thirst." The total, from this viewpoint, is a dynamic, complete harmony that if one comprehends, one does not desire to change. (7)

A common theme of the mystical experience is the sense of many interconnected worlds within the One Reality. Those who undergo such an experience perceive an overall unity in all that exists – unity in multiplicity. One such report was documented by Canadian physician Richard Maurice Bucke in his seminal book *Cosmic Consciousness*:

> Now came a period of rapture so intense that the universe stood still, as if amazed at the unutterable majesty of the spectacle. Only one in all the infinite universe! The All-loving, the Perfect One . . . In that same wonderful moment of what might be called supernal bliss, came illumination. I saw with intense inward vision the atoms, or molecules, of which seemingly the universe is composed – I know not whether material or spiritual – rearranging themselves, as the cosmos (in its continuous, everlasting life) passes from *order to order*. What joy when I saw that there was no break in the chain – not a link left out – everything in its place and time. Worlds, systems, all blended into one harmonious whole. Universal life, synonymous with universal love! (8)

Mystical experiences also occur in the lives of ordinary people without a spiritual leaning. In *The Deepest Acceptance*, Jeff Foster relates the profound experience of a scientist and atheist during the birth of her child:

> As she talked about her experience of her daughter's birth, her words were not those of an atheist; they were religious words, spiritual words, words pregnant with awe and wonder and the overwhelming miracle of creation. She talked about the miracle of life itself – the mystery of birth and of death, the cosmic miracle that permeates all things. She told me that as she held her newborn daughter for the first time, all self-centered thoughts fell away, past and future dissolved, and suddenly there was only this – only life itself, present, alive, mysterious. There was only this precious moment, here and now, and nothing more . . . She told me how amazed she was that something so mysterious and *alive* could have emerged from her, how something could have come out of nothing, how life could produce life out of itself, how the same life that was present at the Big Bang was somehow also here, in the form of this beautiful creature. She was suddenly consumed with an unconditional love – for her daughter, for all babies and mothers everywhere, for all existence. It as a love she had no words for . . . For a moment, she had touched the wholeness of life, the wordless mystery that permeates all creation. For a moment, she had *fallen in love* with existence; the separation between her and life had fallen away, to reveal a love with no name. (9)

Spirituality and the Absolute

The world's spiritual traditions affirm the principle of 'unity in diversity' as the foundation of their cosmological teachings. In the words of Ramana Maharshi: "That which IS, is only one. It is omnipresent and universal. We say, here is a table, there is a bird. There is thus a difference in name and form only, but That which Is, is present everywhere and at all times."

- In Mahayana Buddhism, the essence of the universe is succinctly described as: “One in One, One in Many, Many in Many, and Many in One.”

- Forms appear from nowhere and then disappear into the unknown Void. Underlying the incessant flux of phenomenal existence is an enduring substratum, the Source of All. The *Bhagavad Gita* describes it as “the Eternal, the All-pervasive, the Immutable, the Unmanifest beyond all thought and yet capable of being realized as This.”

- Gurdjieff: “The law of unity is all-embracing. Everything in the Universe is one, the difference is only in the scale; in the infinitely small we shall find the same laws as in the infinitely great.”

- Ramana Maharshi: “There is diversity in the world. A unity runs through the diversity. The Self is the same in All. There is no difference in spirit. All the differences are external and superficial.”

- Sri Anirvan: “The Void manifests in an infinite plenitude of forms and modes; aspects of the one and the same Real whose content can never be exhausted.”

- Sri Nisargadatta Maharaj: “The whole is real, the part comes and goes. The particular is born and reborn, changing name and shape. But it is the changeless Reality which makes the changeful possible.”

- Sri Aurobindo: “What then was the commencement of the whole matter? Existence that multiplied itself for the sheer delight of being and plunged into numberless trillions of forms so that it might find itself innumerably.”

- Zen master Seng Ts’an: “One is no other than all; all no other than one.” And, ”If the mind makes no discrimination, the ten thousand things are as they are, of single essence.”

The concept of an underlying unity in the universe forms the basis of many philosophical and spiritual systems. They assert that behind the manifest world of diversity there lies a unity beyond form or appearance. An associated corollary is that each form has relative value but no absolute inherent nature, similar to the Buddhist teaching that no thing of the world has any independent self-nature.

The idea of ‘the One and the Many’ has also been expressed in other metaphysical forms; appearing, for instance, in Hindu mythology:

> There is a Hindu myth about the Self of the universe that perceives all of the existence as a form of play. However, since the Self is what there is, and is all that there is, it has no one separate to play with. Thus, according to the Hindu tradition, it plays a cosmic game of hide-and-seek with itself. It assumes a

> kaleidoscope of faces and facades – a dazzling infinity of masks and forms until it has become the living substance of the entire universe. In this game of hide-and-seek it can experience ten billion lifetimes, see through ten billion eyes, live and die ten billion times. Eventually, however, the Self awakens from its many dreams and remembers its true identity. It is the one and eternal Self of the cosmos. (10)

Advaita Vedanta teaches that the world of phenomena emerges from a silent, timeless background of pure Being. Forms appear and disappear, but the unmanifested ground of existence, prior to and beyond appearances, remains eternally present. Jean Klein, a Western teacher from this tradition, sometimes employs the analogies of sparks thrown out by a fire or the web of a spider to describe the fragmentation of the One or All into the multiplicity of forms and objects. In *Be Who You Are*, he writes: "The everlasting present is completely unrelated to time and space. Therefore, it has no link with the past, the future, or any given place. In its very essence it is reality (here and now)."

> Since this reality lies outside any mental framework, it cannot be expressed, communicated or known by any means but by pure experience alone. From this background, thought, and with it the world of multiplicity, arises and then back to it returns. When the mind is in any way active, this background is consciousness as witness, absolutely non-involved. When mental activity ceases, it is pure objectless consciousness. This background is our true nature and can only be revealed spontaneously, i.e., in an attitude devoid of any striving, of any premeditation, any intention. This reality, being formless, escapes any qualification whatsoever. However, the traditional words peace and bliss are nearest to expressing it. This background can be perceived in each interval that occurs between two thoughts or two perceptions. In such intervals one may come upon the timeless moment, in other words, the timeless present . . . As long as we are unable to conceive being in any aspect other than form, the presence of the formless (the background) gives us a false impression of emptiness which we immediately strive to fill with forms (objects). In this way we bypass a marvelous chance of being. (11)

Sufis distinguish the relative (phenomena, the world of myriad forms) from the Absolute (the realm of emptiness, underlying principle). The relative and the Absolute depend on each other: the Absolute is expressed in the relative through mutual interdependency. This relationship is expressed poetically by the Sufi Akhlaq-i-Muhsini: "The bird which knows not of sweet water, has his beak in salt water all the year."

> This salt water, in the mind of the Sufi, is what is otherwise called 'The World.' The ordinary person imagines that that which he more instantly perceives, like material objects and obvious (to him) thoughts, must logically be what is more real. But the Sufi says that so-called concrete things are not experienced but inferred. You infer fire from smoke, and smoke may appear to be real, but its

> underlying reality is the fire. When this habit of assuming that instantly perceptible things are more important than more subtle ones goes, the latter become perceptible. It is for this reason that the great Sufi Sheikh Abdul-Karim Jili says: "Truth, reality [*al-Haqq*] is felt, perceived: the world is inferred [*ma'qulun*]." As long as one regards what are in fact secondary things (including one's secondary, conditioned self) as primary, the subtler but more real primary element – Reality and the Essence of the individual – will not be perceived. (12)

In classical Sufism, Ultimate Reality is sometimes described as "a hidden treasure." By transcending the attributes of the phenomenal world, the mystic can directly experience the Unity lying behind appearances. In the *Mathnawi*, Jalaluddin Rumi speaks of 'the One and the Many':

> Rumi is uncompromising in his belief in Divine Unity. He postulates a universal Being which may be regarded as the essence of phenomena. This Being is all that exists; there is nothing else. The multitudinous forms of phenomena produced by the manifestation of various attributes of the One Real Being are compared to shadows which owe their existence to sunlight falling on a wall. Demolish the wall of illusion and all phantoms disappear; and you see nothing but the Sun of Unity. The many are nothing but modes and aspects of the One whence all numbers originate. (13)

Ultimately, the perceived duality between unity and multiplicity disappears in pure awareness and being. Jean Klein: "Generally we think that an object exists outside ourselves, that it has an independent existence, but that is only a belief. It is not based on experience or fact. The so-called object outside of us needs consciousness to be perceived. Consciousness and its object are one, so you create, you project the world from moment to moment."

> On the level of the body-mind there is multiplicity, but on the level of being there is only oneness. All living beings are one. On the level of the body-mind there are variations but only variations in quantity. The quality is everywhere the same. It is a question of degree, not a question of quality. All beings have the same quality, virtually, and some of them actually. Some have actualized it, but virtually, potentially, the same quality is in every human being. So when you have realized your real nature, there are no others; there is only oneness. (14)

The concept of 'the One and the Many' has also been expressed metaphorically in certain Eastern teachings in terms of a drop of water from a limitless sea. Haji Bahaudin, Dervish of Bokhara, extends the metaphor to the universal human longing for spiritual completion and enlightenment: "Exercises of remembering present and recent experiences are designed to provide us with the capacity for remembering farther back; remembering that which is in suspension or abeyance, and that for which we long, even though we do not know it."

> When we say: 'You are a drop of water from an illimitable Sea,' we refer both to your present individuality, as a drop, to all your past individualities, as successive drops and waves, and also to the greater bond which unites all these phases with all other drops, as well as with the greater Whole. When viewing this Whole, if we do it from the point of view of the grandeur of a Whole Sea, we shall briefly glimpse something of the greatness of the drop in its possible function as a conscious part of that Sea. In order to know the relationship between the drop and the Sea, we have to cease thinking of what we take to be the interests of the drop. We can only do this by forgetting what we take ourselves to be, and remembering what we have been in the past, and also remembering what we are at the moment, what we really are; for the relationship with the Sea is only in suspension, it is not severed. It is the suspension which causes us to make strange makeshift assumptions about ourselves, and also to blind us to true reality. (15)

Science and Wholeness

Many scientists and philosophers are also in accord with the teachings of the world's great spiritual traditions that all the disparate objects and events of the phenomenal world arise from an underlying essential Unity that transcends time and space:

- Italian philosopher Giordano Bruno: "Out of this world we cannot fall."
- Stoic philosopher Marcus Aurelius: "Constantly picture the universe as a single living organism."
- Physicist Erwin Schrödinger: "Multiplicity is only apparent; in truth there is only one Mind."
- British philosopher W.T. Stace: "The whole multiplicity of things which comprise the universe are identical with one another and therefore constitute only one thing, a pure unity. The Unity, the One, is the central experience and concept of all mysticism."
- Physicist David Bohm: "The whole is present in each part, in each level of existence. The living reality, which is total and unbroken and undivided, is in everything."
- Psychologist Lawrence LeShan: "There is a central unity to all things. The most important aspect of a 'thing' is its relationships, its part in the whole. Its individuality and separateness are secondary and/or illusory."
- Transpersonal psychologist Jeffrey Eisen: "That which knows existence is identical to the existence it is knowing. This is the underlying unity."

The classical Greek philosophers believed that the ever-changing phenomena appearing to our senses could be traced back to one all-embracing principle. For instance, Plato conceived the universe as "an organic whole in which every entity influences and is influenced by every other entity within a framework of varying scales of structure, purpose and time."

Scientists now realize that 'unity in diversity' and 'mutual interdependency' are the basic principles governing the life and evolution of the myriad organisms and species inhabiting the natural world. "The interactive and interconnected processes of the manifest world play out through all scales of existence. They enable the whole-world to be expressed through the diversity of its many expressions."

> When we look at the amazing diversity of Nature, we see cooperation far more than we see competition. And while there are hierarchies throughout the food chains of biological life, even between predators and prey there are mutual benefits among the species involved. From the very beginning of life on Earth, cooperation within and between species – rather than competition – has been paramount. In fact, many single-cell organisms, including the primitive archaea, which were the first life-forms on Earth, swap genes to an amazing degree. So prevalent is their cooperation that biologists are unable to identify clear boundaries and so establish different species. The extraordinary diversity of species in ecosystems is far greater than if it were driven primarily by competitive factors. Rich ecosystems have an incredible range of creatures, both plant and animal, that depend on each other in myriad ways and exploit often extremely narrow niches in their environment to collectively produce abundant displays of life. (16)

According to physicist David Bohm, the information of the entire universe is contained in each of its parts. In *Wholeness and the Implicate Order*, he writes: "The entire universe has to be thought of as an unbroken whole. In this whole, each element that we can abstract in thought shows basic properties that depend on its overall environment. Ultimately, the entire universe has to be understood as a single undivided whole, in which analysis into separately and independently existent parts has no fundamental status." Examples from the natural world abundantly illustrate this idea: a giant oak tree is able to produce an acorn that contains all the information to replicate itself, and the pattern of each human being is written into the genes of each sperm cell and ovum – concentrated information encased in the part, yet sufficient to reconstitute the whole. The findings of modern science support the principle of 'the part reflecting the whole.' In *A Sense of the Cosmos*, professor of philosophy Jacob Needleman speaks of 'life within life' in the natural world:

> Almost every great discovery of modern biology, every breakthrough to a new scale of size and time, reveals that life exists within life, and worlds exist within worlds. Every structure and process have shown themselves to be involved with the whole of life, from the digestion of food to the exchange of neuronal energies, to the patterns of insect communication, bird migration or

> biological rhythms. Whenever we have looked to a part for the sake of understanding the whole, we have eventually found that the part is a living component of the whole. In a universe without a visible center, biology presents a reality in which the existence of a center is everywhere implied. (17)

The overall unity of the cosmos extends from the smallest sub-atomic particles to the immensity of galaxies. Human beings reflect all scales of the universe. In *Space, Time & Medicine*, Larry Dossey writes: "Our everyday experience, even down to the smallest details, seems to be so closely integrated to the grand-scale features that it is well-nigh impossible to contemplate the two being separate. We seem to be part of a basic oneness with the universe, not only considering the origins of our constituent elements, the chemicals that comprise our bodies, but also with regard to the physical laws that govern us."

> From the level of the electron to that of stars and galaxies, modern physics points to a unity of matter and its environment. This interaction is so intimate that matter and its surrounding environment cannot any longer be considered separate entities. Man, in his in-between world, situated in size between the electrons and the galaxies, also cannot be considered separate from his environment. Our oneness with the universe is manifested in the bio-dance, the endless flow of chemical elements between the human body and its environment . . . Furthermore, the quantum physical descriptions of the smallest level, the subatomic realm, have destroyed the idea of any separation of matter into distinct and separate particles, and have led to the conclusion that all "particles" are fundamentally connected to all other particles in the universe. From electrons to human bodies to galaxies – parts form wholes with the environment. (18)

Scientists now realize that the universe is a seamless whole which only appears to be composed of separate, independent parts: "Dividing reality up into parts and then naming these parts is always arbitrary, a product of convention, because everything in the universe is no more separate from one another than different patterns in an ornate carpet." However, things can be part of an undivided whole yet still possess their own unique qualities. An analogy is the eddies and whirlpools that often form in a river. Each appears, for a time, as a separate thing possessing characteristics such as size, duration, and direction of rotation. But ultimately, it is impossible to determine where a given whirlpool ends and the river begins.

Transpersonal psychologist Jeffrey Eisen asserts that, on the perceptual level, the things of the universe have their own individual nature: "Everything has its *own nature*, own properties, own ways of interacting. Every emergent phenomenon has an emergent nature. On this level, the stuff of the universe is as infinitely varied as the individual natures of everything. There is no one stuff because everything does not show one nature. A dog has dog nature, a quark has quark nature. However, on the aperceptual level, existence or Oneness forms the unified field of all that is."

> There exist two realms of existence, the realm of Oneness and the "perceptual" realm of separate things. The realm of Oneness is unperceived, unkowable (in the perceptual sense), and does not follow the Newtonian laws of physics that govern the realm of separate things. The realm of separate things is knowable, tangible, quantitative, and is governed by the Newtonian laws of physics, yet it is in some profound sense illusory. All of its qualities are created by perception, either self-perception or perception by others. Everything exists and functions simultaneously in both of these realms . . . In perception, there always exists two levels of existence, Oneness and duality. To be adequate, every explanation has to take both levels of existence into account simultaneously, the aperceptual realm of Oneness and the dual realm of perception. Everything is a separate thing, when and to the degree to which, it perceives or conceives itself as separate. Separation is fundamentally a matter of self-perception and identity! This principle of self-perceived identity holds equally for almost all levels of existence, from the atomic level to the "I concept" of you and I. In fact, it is the key to enlightenment! (19)

Physicist Erwin Schrödinger, who received the Nobel Prize in Physics in 1933, was strongly influenced by the writings of acclaimed philosopher Arthur Schopenhauer, who believed that "everything in the universe is interrelated and mutually attuned." Schrödinger extended this idea to encompass the concept of a single mind or consciousness. In *Mind and Matter*, he wrote that this One Mind was "universal, transpersonal, collective, infinite in time and space, and immortal and eternal."

The evolution of the universe cannot be understood by isolating seemingly independent parts as they are not really separate – rather they are separate *perceptions* (from different viewpoints) of the same thing. Jeffrey Eisen: "In a whole, which is what any ecological system is, aspects or perceptible parts of the whole are always precisely attuned to one another, for they co-evolve that way."

> Our universe did not occur as the sum of different unrelated probabilities. Rather, it evolved in a complex lockstep where every "next step" of the whole in all of its infinite complexity and diversity could only have eventuated from its preceding conditions. Indeed, if you take the system as a whole, the next step has to eventuate from the preceding steps. Evolution is not something that occurs only to an organism in relationship to its immediate environment. It is something that happens simultaneously to the universe as a whole. The identification of separate, individual parts is a perceptual illusion, as is the narrowing of focus down to an individual organism or species and its immediate niche. Every part is really a simultaneously coevolving aspect of the whole. The universe is an evolving whole, an infinitely complex ecology in which every aspect from the weak nuclear force to life itself is a complementary part. (20)

The Holographic Universe

The mathematical theory underpinning the hologram was developed in the 1940s by the Nobel-winning physicist Dennis Gabor. However, it was not until the 1960s, with the invention of the laser, that holograms could actually be constructed. Essentially, a holographic image is created when two interfering wave patterns of coherent light from a laser impinge on a photographic plate. This produces a three-dimensional "picture" of an object in which each portion of the hologram reflects the total object. The holographic principle was applied by Dutch theoretical physicist Gerard 't Hooft in 1993 to the entire cosmos. He proposed that all the information contained in a region of three-dimensional space could be represented as a hologram of the information existing on its two-dimensional boundary.

In *Mysticism and the New Physics*, Michael Talbot points out that "the universe cannot be understood as an assemblage of independent parts like the daubs of paint in an impressionistic painting. It is a hologram, a dynamic web of interrelated events in which each part of the web determines the structure of the whole." The basic principles underlying the hologram are relatively simple:

> Holograms are a type of transparent picture, created with the aid of a laser, in which the image contained is not two-dimensional like normal photographs, but three-dimensional. If you have a hologram of an apple you can tilt the plate a little to one side and actually see behind the apple. The most intriguing thing about a hologram is that if you cut it in half you will have two complete images – each containing the entire apple. If the cutting is repeated you will get four apples, eight, etc., because each portion of a holographic transparency contains the entire image. The property of being "holographic" or having every part contained in the whole is remarkable because it indicates that the organization of the information contained in a hologram is much different from the organization of information in normal pictures. A hologram cannot be divided up into fragments. Because each apparent bit of a holographic image can only be understood as it relates to the collective bits of the entire picture, we may speak of it as possessing certain "field" properties . . . The same holographic/field relationship also appears to govern the structure of life and, indeed, the structure of our thinking processes as well. (21)

The concept of a holistic network in which each individual object is not merely itself, but also reflects every other object, also occurs in traditional spiritual teachings:

> The hologram is strikingly similar to the metaphor of Indra's net, developed in the 3rd century by the Mahayana school of Buddhism. When Indra fashioned the world, he made it as a net or web, in which there is a glimmering jewel at every knot. The net is infinite in dimension; therefore, the jewels are infinite in number. In the glittering surface of every jewel is reflected the image of all the other jewels in the net – an infinite mirroring process, symbolizing the

> interpenetration, interconnectedness, and simultaneous mutual identity of all phenomena in the universe. (22)

There is convincing scientific evidence that many natural phenomena are based on the holographic principle. "Self-similar patterns, suggesting that they may be projections of holographic codes, are discovered in field after field of investigation, from the spacing of galaxies, to the frequency and energy of earthquakes, even to the cycles that describe changes in the planet's orbital eccentricity, axial tilt, and precessional wobbles."

In *CosMos*, Ervin Laszlo and Jude Currivan discuss the basic parameters of the holographic universe and the extent to which the holographic principle underlies many natural systems at all levels of reality: "The latest discoveries across all scientific disciplines are revealing a radical new vision of the nature of the physical world as being imbued with and in-formed by a holographic field; thus, it is innately interrelated, coherent, and harmonic at *all* scales of existence. The evidence is showing that not only natural systems, such as weather patterns, are holographic, but that biological organisms, ecosystems, and man-made phenomena – including the incidence of conflicts, economic and social systems, and even the World Wide Web – are too."

> We are beginning to see the entire universe as a holographically interlinked network of energy and information, organically whole and self-referential at all scales of its existence. We, and all things in the universe, are nonlocally connected with each other and with all other things in ways that are unfettered by the hitherto known limitations of space and time. The insight now emerging is that ours is an inclusive whole-world linked beyond space and time, matter and energy, by a primordial field of information: the Akashic field, named after the Sanskrit concept of *Akasha*, meaning all-pervasive, all-including space. It is the holographic information-field, the field that in-forms the present with the past and paves the way to the future. The Akashic field is an element of the cosmic plenum – the womb from which everything emanates, in which everything is manifested, and to which all things ultimately return. From it arises all that is, has ever been, and will be. (23)

Some scientists are beginning to recognize that not only is physical reality expressed as a cosmic hologram, but each of us is essentially a holographic microcosm. Larry Dossey proposes that the hologram is a useful metaphor to illustrate the relationship between individual minds and the One Mind: "The brain has an incredible capacity to store information and only a holographic model of consciousness can possess such a capacity. Some 10 billion bits of information have been successfully stored holographically in a cubic centimeter."

The holographic model has been applied to both the quantum world and the functioning of the human brain:

> There are many striking similarities between the quantum potential and the interconnections of the human brain. Both deal with levels of organization in

> which the behavior of discrete entities, synapses or hypothetical particles, seem to be governed by the collective. Both involve the carrying and transference of a signal and an apparent exchange of information. In both, the discrete entities behave as if they are interconnected, but no interconnection – chemical, electro-chemical, electromagnetic, or any other known process, can be found. Is there, then, some chance that the two respective processes are related? The major obstacle in creating a model of consciousness involves a misconception basic to both neurophysiology and quantum physics. It concerns the shift in the scientific worldview from "causality" to a more holographic or "teleological" approach. Webster's defines "teleology" as "a belief that natural phenomena are determined not only by mechanical causes but by an overall design in nature." (24)

In his ground-breaking work *Wholeness and the Implicate Order*, English physicist David Bohm employed the language of a "holographic universe" to develop a theory of quantum physics which views the totality of existence, including matter and consciousness, as an unbroken whole:

> Bohm's work in subatomic physics and the "quantum potential" led him to the conclusion that physical entities which seemed to be separate and discrete in space and time were actually linked or unified in an implicit or underlying fashion. In Bohm's terminology, under the *explicate realm* of separate things and events is an *implicate realm* of undivided wholeness, and this implicate whole is simultaneously available to each explicate part. In other words, the physical universe itself seemed to be a gigantic hologram, with each part being in the whole and the whole being in each part. In the explicate or manifest realm of space and time, things and events are indeed separate and discrete. But beneath the surface, as it were, in the implicate realm, all things and events are one and undivided. (25)

In a similar vein, neuropsychologist Karl Pribram has put forth a holographic model of the brain based on the finding that the storage of information is not localized in specific areas of the brain but instead is distributed quite widely. A new perspective on brain functioning emerged from his research, infused with the holographic paradigm:

> Holographic information is not only decodable by the brain; the brain may actually operate on the basis of such information. The cerebral mechanisms for the decoding of holographic signals has been outlined by Karl Pribram. According to Pribram's "holonomic brain theory," dendrites attached to neurons in the brain branch in complex patterns and form the dendritic arbor. Information is encoded in the interference patterns of waves throughout the synapto-dendritic web. This is distributed information, where every part of the dendritic arbor processes all the information captured by the system as a whole. Initially Pribram advanced the holonomic brain theory to account for holographically coded information originating in Bohm's explicate order,

> but in collaboration with Bohm he then explored the possibility that the holographic information received by the brain originates in the implicate order – the deep dimension of the cosmos. (26)

Although initially working independently, both Bohm and Pribram recognized the importance of the holographic paradigm in explaining a number of previously inexplicable phenomena, including near-death experiences, lucid dreams, synchronicities, and archetypal experiences:

> After arriving at their views, Bohm and Pribram quickly realized that the holographic model explained a number of other mysteries as well, including the apparent inability of any theory, no matter how comprehensive, ever to account for all the phenomena encountered in nature; the ability of individuals with hearing in only one ear to determine the direction from which a sound originates; and our ability to recognize the face of someone we have not seen for many years even if that person has changed considerably in the interim. But the most staggering thing about the holographic model was that it suddenly made sense of a wide range of phenomena so elusive they generally have been categorized outside the province of scientific understanding. These include telepathy, precognition, mystical feelings of oneness with the universe, and even psychokinesis, or the ability of the mind to move physical objects without anyone touching them. Indeed, it quickly became apparent to the ever-growing number of scientists who came to embrace the holographic model that it helped explain virtually all paranormal and mystical experiences. (27)

There is abundant evidence that the universe is indeed a cosmic hologram. Attributes such as harmonic order and self-similar patterns of information appear to underlie virtually every type of natural phenomenon at all scales of existence. "The cosmic hologram is being revealed across many different fields of scientific research, from the tiniest physical level of the Planck scale to the largest scale of our entire universe and at every level in between – including the reality of our everyday lives." Viewing the universe as a cosmic hologram explains how space-time manifested and evolved from its simplest to its most complex forms:

> The fundamental attributes of the cosmic hologram that *is* the physical reality of our Universe are all innate in the information that is universally expressed as conserved energy-matter and entropically expressed as space-time. Such information makes up the exquisite order and fine-tuning of its instructions, the wonderfully elegant simplicity of its initial conditions, the amazing versatility of energy-matter that constitutes its single ingredient, the incredible exactness of the recipe that defines all interactions and processes, and the ideal nature of its holographic and pixelated container. From its nonphysical foundations, the cosmic hologram encodes informational fractal patterns of potentiality that manifest throughout space-time at all scales of existence and that dynamically

> guide the template of evolution. For ourselves, perhaps most important is its essential nature that enables our Universe to exist and evolve as a nonlocally coherent and unified entity from its first moment until its last, empowering the advancement throughout its lifetime of ever-greater levels of complexity and the emergence of self-aware intelligence like us. (28)

The information contained in a hologram guides the development of each constituent part in relation to the whole: "In the hologram, each part contains the information of the whole. If we are each part of a larger whole, in effect, holograms within the larger hologram of the universe, then we potentially have access to *all* the information of the universe." The concept of the hologram has been extended to encompass the evolution of human consciousness and life itself:

> The whole of man's evolutionary history is impregnated in the consciousness of every atom, cell, molecule, organism. The creation of a proton from a super-nova explosion is imprinted in the self-image of that proton. The holograms of proton, cell, molecule, human, star, supernova, are replications created by the intersecting of light beams in standing waves, of the original image projected into the light of consciousness by consciousness itself. Therefore, all images of creation are reflections at different angles of the original image. The many is in the One and the One in the many. Thus, the universe is truly contained in the "grain of sand" and the origins of life are present in every brain cell. Every part contains the whole hologram, every drop of water contains the whole ocean. The experience of cosmic consciousness is reliving and re-creating the play of consciousness, the creation of billions of stars and supernovas from time im-memorial and the realization of the total evolutionary potential of man's consciousness. (29)

References

(1) Jeffrey Eisen *Oneness Perceived* (St. Paul, Minnesota: Paragon House, 2003), p. 4.
(2) Jeffrey Eisen *Oneness Perceived* (St. Paul, Minnesota: Paragon House, 2003), pp. 6-7.
(3) Ken Wilber *No Boundary* (Boulder: Shambhala, 1981), p. 42.
(4) Lynne McTaggart *The Field* (New York: Harper Perennial, 2003), pp. 6-7.
(5) Ralph Waldo Emerson *Essays: First Series* (Seattle: CreateSpace, 2011), p. 96.
(6) Walt Whitman *The Complete Poems* (New York: Penguin Classics, 2004), pp. 288-289.
(7) Lawrence LeShan *The Medium, the Mystic, and the Physicist* (New York: Ballantine Books, 1975), pp. 49-50.
(8) Richard Maurice Bucke *Cosmic Consciousness* (New York: E.P. Dutton, 1969), p. 326-327.
(9) Jeff Foster *The Deepest Acceptance* (Boulder: Sounds True, 2017), pp. 3-4.
(10) Michael Talbot *Mysticism and the New Physics* (New York: Bantam Books, 1981), p. 160.
(11) Jean Klein *Be Who You Are* (Dorset, England: Element Books, 1989), pp. 43-44.
(12) Idries Shah *Learning How to Learn* (London: Octagon Press, 1983), p. 124.

(13) Afzal Iqbal *The Life and Work of Jalaluddin Rumi* (London: Octagon Press, 1983), pp. 250-251.
(14) Jean Klein *Transmission of the Flame* (Santa Barbara: third Millennium Publications, 1990), pp. 73-74.
(15) Idries Shah *The Way of the Sufi* (London: Octagon Press, 1984), pp. 261-262.
(16) Ervin Laszlo and Jude Currivan *CosMos* (Carlsbad, California: Hay House, 2008), pp. 174-175.
(17) Jacob Needleman *A Sense of the Cosmos* (New York: E.P. Dutton, 1975), pp. 63-64.
(18) Larry Dossey *Space, Time & Medicine* (Boulder: Shambhala, 1982), p. 80.
(19) Jeffrey Eisen *Oneness Perceived* (St. Paul, Minnesota: Paragon House, 2003), pp. 69-70.
(20) Jeffrey Eisen *Oneness Perceived* (St. Paul, Minnesota: Paragon House, 2003), pp. 72-73.
(21) Michael Talbot *Mysticism and the New Physics* (New York: Bantam Books, 1981), pp. 44-45.
(22) Larry Dossey *One Mind* (Carlsbad, California: Hay House, 2013), p. 32.
(23) Ervin Laszlo and Jude Currivan *CosMos* (Carlsbad, California: Hay House, 2008), pp. xiii-xiv.
(24) Michael Talbot *Mysticism and the New Physics* (New York: Bantam Books, 1981), p. 50.
(25) Ken Wilber, ed. *The Holographic Paradigm* (Boulder: Shambhala, 1982), pp. 2-3.
(26) Ervin Laszlo *What is Reality?* (New York: Select Books, 2016), p. 26.
(27) Michael Talbot *The Holographic Universe* (New York: Harper Perennial, 2011), p. 2.
(28) Jude Currivan *The Cosmic Hologram* (Rochester, Vermont: Inner Traditions, 2017), p. 119.
(29) Christopher Hills *Nuclear Evolution* (Boulder Creek, California: University of the Trees Press, 1977), p. 148.