TOWARD A MATURE SPIRITUALITY FOR TODAY: DECLINING AND EMERGING PARADIGMS

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We are creatures of culture. Our values and our spirituality are shaped by the dominant worldviews of our time. Profound transformations have occurred in worldviews in the last hundred years. These changes are impacting the evolution of spirituality. Hence, before I describe the features of a mature spirituality for today (in a forthcoming article), I explore in the current article some of the key developments of the recent past that are shaping a new spirituality.

Several years ago physicist Fritjof Capra wrote a book (1982) called *The Turning Point*. That book discussed the evolving paradigms. Paradigm is a concept that Thomas Kuhn made famous in a 1962 book—*The Structure of Scientific Revolutions*.

Kuhn's (1962) book explained paradigms, paradigm shifts and resistance to paradigm shifts. A paradigm refers to certain basic assumptions that a community takes for granted and which create a particular vision of reality within that community and provide the basis for the organization of thought and behavior. The scientific community, for example, holds certain beliefs and assumptions as fundamental. Their research and interpretation of data are governed by these. Anything that does not fit into this paradigm is rejected. But sometimes it happens that a scientist looks at a familiar phenomena in a new way and discovers something that does not fit into the existing paradigm. The rest of the scientific community usually resists the new discovery. However, as other scientists come up with similar discoveries the hold of the old paradigm begins to loosen and a new paradigm slowly emerges.

Capra's (1982) book was recently made into a movie, called *Mindwalk*. There are three main protagonists in that story—a poet, a scientist and a politician. The three discuss various aspects of contemporary life in the light of changing paradigms. One of the early scenes in the movie is set in a medieval castle, which has a huge mechanical device that explains the working of a clock. The clock symbolizes the old paradigm that controlled thought and behavior for hundreds of years—the mechanistic and dualistic paradigm. When every part of the clock works in conjunction with every other part, the clock works in perfect order. And, similarly, all reality—the whole universe--can be understood, like a clock, as an aggregation of parts. If every part works well, the whole works well. And if one wants understand the whole, then one only needs to split the whole into tiny parts and examine each part in detail. And just as clock needs a clockmaker, the universe requires a Creator. The mechanistic paradigm fitted very well with the religious notions of God and creation.

Ilya Prigogine and Isabelle Stengers (1984) describe the relevance of the clock symbol:

> Why did the clock almost immediately become the very symbol of world order?….A watch is a *contrivance* governed by rationality outside itself, by a plan that is blindly executed in its inner workings. The clock world is a metaphor suggestive of God the Watchmaker, the rational master of a robotlike nature. At the origin of modern science, a "resonance" appears to have been set up between theological discourse and theoretical and experimental activity—a resonance that was no doubt likely to amplify and consolidate the claim that

> scientists were in the process of discovering the secret of the "great machine of the Universe." (p. 46)

In the concluding scene of *Mindwalk*, the three protagonists continue their conversation as they walk along a beach at sunset. That scene which brings together the earth, sky, water and the humans in harmony is emblematic of the emerging holistic-ecological paradigm.

Greek Dualistic Worldview

The Greeks are celebrated "as the precursors of modern science" (Ferris, 1997, p. 24). The mechanistic-dualistic paradigm which gave rise to the scientific method had its origins in their philosophy.

The Greeks saw much pain and loss accompanying change. Permanence, the opposite of change, maintains order, stability and harmony. Hence they considered permanence to be good and change to be evil. This permanence against change was the primary and fundamental split that gave rise to all the dualisms. Change because it is evil is to be resisted. Permanence and its constituents –stability and order—are to be promoted.

Change that was considered evil was witnessed within one's own humanity. The body that decays and disappears represented change. While the body decayed and disappeared one's identity was maintained by the soul or spirit. Body composed of matter—the principle of change-- was equated with evil and spirit-the principle of permanence-was equated with good.

This dualistic understanding of reality found an early culmination in the work of Plato who proposed a two-layer view of human nature. Plato argued that a layer of mind, abstract thought, spirit, or ideal is better or more advanced than a more concrete, sensory, and bodily layer. Hence, the highest form of thinking was one concerned with pure abstractions. In contrast, thinking permeated by emotions, such as art, poetry, or music was inferior. These layers were arranged hierarchically: mind-spirit formed the superior pole, body and senses the inferior one. Emotions bring about turbulence and instability and so are bad and inferior. Reason contributes to order and stability and so is good and superior.

In the Symposium, Plato discussed the nature of love and assigned different values to different forms of love. Love involving women and children were seen in physical and material forms, while love of men had to do with spirit and ideas. He implicitly associated the masculine with transcendence (mind and spirit), and the feminine with the immanent (body and matter). This dualistic understanding became more explicit in Plato's student Aristotle. In his theory of reproduction, Aristotle theorized that the woman contributed the more primitive, material principle to the embryo, and the man made a spiritual (non-material) contribution (Labouvie-Vief, 2000).

Emotion and bodily changes were considered to be mainly female experiences while reason was attributed to the male. Good, thus, became identified with the male and evil with female. The good has to triumph over evil. Reason had to triumph over passion. Hence man had to dominate woman.

These Greek notions of change and permanence, of good and evil, of male superiority and female inferiorly continued to influence Western civilization in profound ways. The dualistic paradigm originating in Greek thinking later found support in Cartesian philosophy and Newtonian Physics.

Cartesian Dualism

The French philosopher Rene Descartes' conclusion "*Cogito, ergo sum*" further consolidated the split between mind and matter, and the superiority of reason over emotion. His conclusion has had a lasting and profound influence on western civilization and on spirituality. He arrived at that conclusion through the process of radical doubt.

> The crux of Descartes' method is radical doubt. He doubts everything he can manage to doubt—all traditional knowledge, the impressions of his senses, and even the fact that he has a body—until he reaches the one thing that he cannot doubt, the existence of himself as a thinker. Thus he arrives at his celebrated statement, 'Cogito, ergo, sum,' 'I think, therefore I exist.' From this Descartes deduces that the essence of human nature lies in thought, and that all things we conceive clearly and distinctly are true…
>
> Descartes' method is analytic. It consists in breaking up thoughts and problems into pieces and arranging these in their logical order. This analytic method of reasoning is probably Descartes' greatest contribution to science. It has become the essential characteristic of modern scientific thought and proved extremely useful in the development of scientific theories and the realization of complex technological projects. (Capra, 1982, p. 44)

The overemphasis on the Cartesian method led to the widespread attitude of reductionism in science—the belief that all aspects of complex phenomena can be understood by reducing them to their constituent parts. The activity of a machine can be effectively described and understood in terms of the activity between the different parts that are connected to each other in specific ways to achieve a particular function.

To Descartes the material universe was a machine. Nature worked according to mechanical laws, and everything in the material world could be explained in terms of the arrangement of its parts. Descartes extended his mechanistic view of matter to the living organism. He considered plants, animals and the human body as machines whose biological functions and motions could be reduced to mechanical operations (Capra, 1982). This mechanical picture of nature was given scientific basic by the mathematical laws of Newton.

Newtonian Physics

The scientific Revolution of the 16th and 17th centuries began with Nicolas Copernicus who over threw the geocentric view of Ptolemy and the Bible. Copernicus' views were confirmed by Johannes Kepler, scientist and mystic. Galileo gave the new theories scientific footing by describing the laws of nature he discovered through mathematical language. He postulated that scientists should limit their investigation of essential properties of matter to what could be measured and quantified—shape, numbers and movement. Scientists became obsessed with measurement and quantification. Francis Bacon gave clear formulation to the theory of the inductive procedure—how to draw conclusions from experiments (Capra, 1982).

Newtonian physics is "the crowning achievement of seventeenth-century science" and "a grand synthesis of the work of Copernicus and Kepler, Bacon, Galileo, and Descartes" (Capra, 1982, p. 48). Newton (born in 1642, the year of Galileo's death) developed a complete mathematical formulation of the mechanistic view of nature.

Newtonian science looked upon the physical universe as an exquisitely designed giant mechanism operating according to exact mathematical law. For Newton, like Descartes before him, the whole is equal to the sum of the parts; all of life and each aspect of life can be perceived as a machine consisting of basic parts which can be changed or modified by intervention, thus influencing the whole. Complex sets of events could be understood by this science only when broken down to their elementary interactions. Newton's mathematical laws consolidated and further refined Descartes' reductionism. Thanks to Newton's scientific genius, reductionism became so ingrained in culture that it became identified with the scientific method. The other sciences accepted these mechanistic and reductionist views of classical physics as correct description of reality and modeled their own theories accordingly (Capra, 1982).

This mechanistic-dualistic paradigm originating in Greek philosophy, consolidated and refined by Cartesian philosophy and marvelously synthesized and given definite scientific rational and mathematical certainty by Newtonian physics was dominant in what is called the Modern Era (1600-1950). This is the period in which most religious orders and congregations in the Church were founded. The spirituality of these orders and congregations as also the entire Christian spirituality came to be contaminated by the spirit of the age—rationalism, dualism, a mechanistic view of the world and reality, and male dominance.

Toward a New Paradigm

Several developments in science and philosophy in the last one hundred years have undermined the mechanistic-dualistic paradigm and paved the way for the emergence of a new one (see Capra, 1997; Ferris, 1997; Laszlo, 1972). Some of these major developments are briefly described below.

Theory of Relativity

Albert Einstein (1879-1955) remains the central figure in exploring the new scientific paradigm. Einstein's fame lies in the discovery of the theory of relativity, which challenged the traditional common-sense notions that space and time are objective realities existing independently. His theory had its origin in the question that he posed himself: "What would it be like to run beside a light beam, at the speed of light?"

The answer to that question forced the abandonment of the classical ideas of absolute space and absolute time. Einstein proved that the passage of time is relative and that the properties of an object were not absolute or fixed, but instead were relative to the position of the observer. His theory undermined the concept of absolute values.

Einstein proposed a *spacetime matrix*—a continuous field of matter-energy in incessant transformation. Relativity theory ushered in the concept of a dynamic universe. It showed that the universe was not a Newtonian machine but interweaving patterns of energy. Matter itself was energy, not solid stuff.

Quantum Theory

The most decisive challenge for the mechanistic-dualistic paradigm came from quantum theory. It was formulated during the first three decades of the 20th century by an international group of scientists including Max Planck, Albert Einstein, Niels Bohr, , Wolfang Pauli, and Werner Hersenberg. The original formulation is attributed to Max Planck.

The fundamental tenet of quantum theory is that reality exists as wholes, not as

isolated, independent units. The universe is not a collection of static and independent objects which can be further decomposed into smaller units as the mechanistic-dualistic paradigm suggested. Neither can it be understood by examining its parts. To the quantum physicist the universe is an inseparable and interconnected web of vibrating and dancing energy patterns in constant motion. In such a universe no one component has reality independent of the entirety. The observer, as in the theory of relativity, is included in the entirety. Quantum theory points to the basic oneness of the universe (Capra, 1982, 1997; Ferris, 1997).

The observations of quantum physics received further confirmation in the discovery of "*quarks*"—the name given to the basic constituents of subatomic matter. In the 1960s Murray Gell-Mann at Caltech (California) and George Zweig at CERN (near Geneva) independently accounted for a vast array of newly discovered particles which were called aces (by Zweig) and quarks (by Gell-Mann), the name that has prevailed. In 1964, Gell-Mann proposed that protons and neutrons are each composed of three quarks. All six quarks were identified by 1995 (Ferris, 1997).

However quarks do not have existence as independent and separate units of matter. They function not in isolation but only in relationships to other quarks. The activity of these subatomic particles is predominantly that of wave like patterns of energy. All attempts to bombard individual quarks out of their relational, wavelike existence proved to be futile.

Moreover, quantum systems exhibit *nonlocality*, that is, they "act like an intimately connected whole regardless of whether their parts are far removed from each other" (Ferris, 1997, p. 270).

Classical physics assumes locality. It assumes that changes are made by direct physical contact. Quantum systems do not require physical contact for change. In what is known as *quantum weirdness*, interfering with one part of the system alters the results observed in another part, even when there is no physical contact between the systems, even when these are very, very far away. Quantum physics sweeps aside the notion of static, independent reality. Everything in the universe is interconnected in a deep way, "on a level where time and space don't count." The universe, as the term implies, is truly one (Ferris, 1997, p. 285).

Modern physics

> shows that we cannot decompose the world into independently existing smaller units. As we penetrate into matter, nature does not show us any isolated basic building blocks, but rather appears as a complicated web of relations between the various parts of the unified whole. (Capra, 1982, p. 70).

Another aspect of quantum weirdness is that quantum events are inherently uncertain and unpredictable. The quantum domain consists wholly of possibilities or probabilities. And what is remarkable is that any particular probability becomes an actuality only when observed. For example, quantum entities are both particles and waves. However, one can know if these are particles or waves only at the moment of observation. In other words, until the moment of observation these quantum systems cannot be said to have either state, particle or wave. One can never be sure if the quantum potential will turn out to be a particle or a wave.

Quantum theory, thus, fundamentally compromises the belief in an objective reality out there. There is no phenomenon apart from observed phenomena. And the

act of observation both creates and affects reality.

> The observer is not—and cannot—be separated from the object being investigated. The so-called observer is actually a participant, an integral part of the quantum system….For the actual world of material objects to exist, then, it is necessary for an observer to step into the quantum system and observe it. (de Quincey, 1999, p. 18)

More than relativity theory, it is quantum theory that makes reality very relative. It destroys the foundations of the dualistic-mechanistic view of the world.

Darwinian Evolution

Although the physicists are the ones that contributed most to the destruction of the old paradigm, the living and social sciences too made their contribution. The discovery of evolution in biology, initiated by Jean Baptiste Lamarck and given definite proof by Charles Darwin

> forced scientists to abandon Cartesian conception of the world as machine that had emerged fully constructed from the hands of its Creator. Instead, the universe had to be pictured as an evolving and ever changing system in which complex structures developed from simpler forms. (Capra, 1982, p., 59).

By showing that every creature is a product of its ancestry, Darwin helped to put aside static conceptions of the world (Ferris, 1997). Darwinian evolution showed that the existing laws of physics were insufficient to explain the complex interactions which take place in a living organism and new laws had to be postulated, the "laws of integrated wholes" (Laszlo, 1972, p. 11).

Process Philosophy

For Alfred North Whitehead (1929), the leading exponent of what has come to be known as process philosophy, change was the very essence of reality. For him as also for other process philosophers such as Henry Bergson, Heraclitus's celebrated dictum "Everything flows." was the fundamental truth. Matter is not static, but always in process.

Like the celebrated American psychologist William James, who wrote that life could be known only by "bathing in the full stream of experience" Bergson also "saw reality not as something static out there to be grasped, but as a stream on which we are floating, on which we must find our bearing and our direction" (Boorstein, 1998, p. 17). Bergson's (1944/1907) *Creative Evolution*, detailed his dissatisfaction with the prevailing mechanistic views of evolution. For Bergson, evolution is creative, that is, "genuinely innovative—that its products cannot be predicted in detail" (Ferris, 1997, p. 195).

Process philosophy was a precursor to relativity and quantum theories in undermining notions of static, objective, and unchangeable reality. In process thinking fluidity and change are more fundamental than stability and permanence.

Systems Theory

The final nail in the coffin of dualistic and mechanistic thinking was hammered in by Systems theory, first introduced by Ludwig von Bertalanffy in 1938 in a seminar at the University of Chicago, where he was a Rockefeller scholar (Hammond, 1999). Systems thinking does away with the notions of separate, discreet, and independent reality. Reality is whole and can only be understood as a whole. "Instead of looking at one thing at a time, and noting its behavior when exposed to one other thing, science now looks at a number of different and interacting things and notes their behaviour as whole under diverse influences" (Laszlo, 1972, p. 6). The essential properties of an organism are

properties of the whole and cannot be found in its parts: "…to all intents and purposes, the characteristics of complex wholes remain irreducible to the characteristics of its parts" (p. 8).

The systems scientist discerns relationships and situations, not atomistic facts and events. The "systems view always treats systems as integrated wholes of their subsidiary components and never as the mechanistic aggregates of parts in isolable causal relations" (Laszlo, pp. 14-15). The systems view consists in looking at the reality in terms of such sets of integrated and interconnected relations. This systems view destroyed the foundations of the Cartesian and Newtonian paradigm, the belief that the behaviour of the whole can be understood from the properties of its parts.

Holistic-Ecological Paradigm

Relativity and quantum theories, supported by evolutionary biology, process philosophy and systems theory, set the stage for the transition from the old dualistic-mechanistic paradigm of Newtonian science and Cartesian philosophy to a new holistic-ecologic paradigm.

The term "holistic" comes from the Greek *holos* ('whole') and "refers to an understanding of reality in terms of integrated wholes whose properties cannot be reduced to those of smaller units" (Capra, 1982, p. 21 footnote). Ecological comes from the Greek *oikos* ("household") and refers to the recognition of the fundamental interdependence of all phenomena (the earth as household) and our embeddedness and dependence on the cyclical process of nature (Capra, 1997, p. 33).

> The universe is no longer seen as a machine, made up of a multitude of objects, but has to be pictured as one indivisible, dynamic whole whose parts are essentially inter-related and can be understood only as patterns of a cosmic process. (Capra, 1982, p.66)

This paradigm shift from the mechanistic-dualistic to that of holistic-ecological worldview has affected every aspect of contemporary culture and society. In Theology it has affected the image of God—from the immovable mover to an emoting being and given rise to contextual theology. In psychology it has led to the decline of the mechanistic instinctual theory of Freud and the development of more relational and inter-subjective theories. In ethics it has led to the emergence of situational ethics and more relative notions of good and evil and right and wrong. In economics, it has led to the move from competition to collaboration. In medicine it has led to holistic or body-mind-spirit medicine. In social organization it has led to the shift from hierarchy to networks and from domination to networking. In the social sciences it has led to the emergence of entire new disciplines such as deep ecology, ecofeminism, and ecopsychology.

Spirituality too is being impacted by this shift from the mechanistic-dualistic to the holistic-ecological paradigm. An article in a forthcoming issue of the Journal will describe some of the salient features of the emerging holistic-ecological spirituality.

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