

**FROM CHAOS TO ORDER: EXPLORING NEW FRONTIERS
IN CONFLICT MANAGEMENT**

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Presented at the Midwest Academy of Management Conference
Organization Development Track
April 4, 2003

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Abstract

Key words: Conflict management, chaos theory, complexity theory, interpersonal conflict, new sciences, quantum mechanics, quantum skills, quantum organizations

Twenty-first century organizations are bombarded with continuous change, and change, whether personal or organizational, often generates conflict. This theoretical paper examines conflict through the lens of the new sciences, specifically the scientific theories of chaos, complexity, and quantum mechanics. These scientific theories provide a new conceptual metaphor for viewing conflict as necessary for both individual and organizational evolution. The authors present not only a new conflict paradigm, they propose a new skill set as well and suggest that these skills can be used by managers and organization development practitioners to create quantum organizations— organizations that embrace conflict and use it for continuous transformation.

Introduction

One of the most notable characteristics of twenty-first century organizations is continuous change. Unstable economic conditions, rapidly changing technologies, global competition, workforce diversity, and new organizational structures are only a few of the factors contributing to an age of exponential change. Furthermore, major change, whether in society, the family, or the firm, generally creates significant chaos. Where there is chaos, there is often stress, and stress frequently becomes the progenitor of conflict. Hence, in this era of radical change and considerable chaos, many organizations are experiencing increased tension which often manifests as interpersonal conflict.

Conflict, of course, has always existed—even in simpler times. Where two or more people are gathered together, there is a potential for conflict. As human beings interact within organizations, differing goals, values, styles, and situations create tension (Walker, 1986; and Bolman & Deal, 1997). In addition to these interpersonal and behavioral factors, traditional organizational structures promote conflict. Functional silos and a plethora of different skill sets and technical specialties lead to communication challenges that often result in conflict. These factors, along with many others, make conflict an organizational reality.

This paper purports that interpersonal conflict is not only unavoidable, it is necessary for individual and organizational evolution. Each conflict situation offers organizations, and the individuals who comprise them, opportunities for transformation. Conflict challenges the status quo, providing a breeding ground for innovation. Managers who try to eliminate conflict are operating under an outdated paradigm. If organizations are to thrive in the twenty-first century, a new view of conflict is required.

Paradigm Shifts

The traditional view of conflict is negative. It has typically been seen as dysfunctional, destructive, irrational, and time-consuming—something to be eliminated or at least suppressed. From this perspective, conflict occurs as a result of malfunctioning individuals or organizations. Therefore, in order to resolve conflict, problems must be identified, causes must be analyzed, and those people or situations contributing to the conflict must be “fixed” (Kilmann & Thomas, 1978). This mechanistic view approaches conflict resolution as a logical, linear process. Robbins comments: “Although research studies now provide strong evidence to dispute that this approach to conflict reduction results in high group performance, many of us still evaluate conflict situations utilizing this outmoded standard” (2001, p. 384).

In the 1950s the emerging human relations view of conflict began to replace the earlier traditional view. The human relations position suggests that conflict is a natural phenomenon in groups and organizations. Therefore, since it is inevitable, it must be accepted and managed. During this era, the management literature introduced the term *conflict management* (Nurmi & Darling, 1997); and, by the 1970s, the field of organization development, with its tool-kit of team building interventions, began to go mainstream, thus providing organizations with new resources for dealing with conflict.

More recently, a third conflict school of thought has emerged, referred to by Robbins as the interactionist view (2001). This perspective moves beyond accepting conflict to actually encouraging conflict. Proponents purport that “a harmonious, peaceful, tranquil, and cooperative group is prone to becoming static, apathetic, and nonresponsive to needs for change and innovation” (Robbins, 2001, p. 385). Though this view is increasingly accepted by management theorists and organization development practitioners, most people in most organizations still dislike (and often try to avoid) conflict. They continue to view conflict through the lens of the three-hundred-year-old scientific paradigm that emerged from Newton’s mechanistic laws of classical physics. According to this paradigm, conflict is to be avoided because conflict leads to chaos and chaos triggers entropy (the second law of thermodynamics). Therefore, conflict is the enemy of rational, scientifically-managed organizations.

The problem with such a paradigm is that it fails to match current reality. Avoiding conflict is impossible and managing it is a task that all too often leads to frustration and fatigue. Furthermore, when conflict is overly managed, nipped in the bud so to speak, opportunities for transformation are blocked. In fact, the so-called “new sciences” suggest that chaos and its byproduct conflict are integral to both individual and organizational transformation. According to chaos theory, high levels of disorder are prerequisite for system evolution. Without the chaos of conflict, life stagnates. It is now apparent that Newton’s second law of thermodynamics represents a partial truth applicable only to closed (static), mechanical systems.

Prigogine was the first to differentiate between the disorder of open and closed systems. He labeled entropy *passive chaos* and evolution *active chaos* (Prigogine and Stengers, 1984).

Passive chaos occurs when a closed system reaches equilibrium and its elements move around randomly. Active chaos occurs in an open system that is in a state of disequilibrium. Open (dynamic) systems, like humans and their organizations, are capable of using chaos to achieve higher levels of complexity and diversity. This process is called self-organization (Wheatley, 1992).

Systems that are closed to new information cannot self-organize. Information is the catalyst that disrupts a system's equilibrium. This happens through the process of iteration. Iteration turns microscopic fluctuations into macroscopic impacts by repeatedly folding the new information back into the system (a process that is analogous to a baker kneading dough). As this new information permeates the system, it reaches a bifurcation (branching/forking) point—a point of significant change or alteration. “A bifurcation in a system is a vital instant when something as small as a single photon of energy, a slight fluctuation in external temperature, a change in density, or the flapping of a butterfly's wings in Hong Kong is swelled by iteration to a size so great that a fork is created and the system takes off in a new direction” (Briggs and Peat 1989, 143).

Bifurcation points are turning points—points where a minor fluctuation in any part of the system can cause a radical change in the system's direction. In organizations, bifurcation points are typically created by conflict. They occur when one individual's goals, values, or style bump up against another who sees the world differently. Traditionally these points of increased tension have been tightly managed, thus interfering with the natural process of feedback and iteration. Subsequently the individuals involved are not allowed to be with their conflict until it reaches a boiling point (bifurcation point)—a point where new directions, new options clearly emerge.

The tension of conflict can generate important new options. If the active chaos is prematurely suppressed, participants all too often retreat back to a state of apparent “peace” while passive chaos continues to fester just below the surface. In such a situation, no paradigm shifts occur. No breakthrough insights emerge. Consequently, old behaviors eventually resurface and the conflict resumes, requiring another conflict management intervention.

Research suggests that though most managers spend about 20% of their time dealing with conflict, they dislike it and would prefer to avoid it (Robbins, 1990; and Thomas & Schmidt, 1976). In fact, conflict is frequently cited as one of the least enjoyable aspects of the leadership role. The need for a new way of thinking about conflict is pressing. An updated paradigm is sorely needed—one in which conflict is viewed as a catalyst for personal and organizational transformation. It has been almost 100 years since Taylor challenged organizations to adopt a more scientifically-based approach to management. Radical discoveries have been made since 1911. New scientific theories have been formulated. It is time to apply these new insights to twenty-first century organizational challenges.

Rethinking Scientific Management

Numerous business authors (Hock, 1999; Kilmann, 2001; Sanders, 1998; Shelton, 1999; Stacey, 1996; Wheatley, 1992; and Zohar, 1997) have suggested that it is time for a new scientific theory of management—one based on all that has been learned since Newton formulated his seventeenth-century principles of classical physics. One place to look for more contemporary management metaphors is in the “new” twentieth-century scientific theories of chaos, complexity and quantum mechanics.

The oldest of these new theories is quantum mechanics, developed in the 1920s. The word *quantum* literally means “a quantity of something;” *mechanics* refers to “the study of motion.” Quantum mechanics is, therefore, the study of subatomic particles in motion (Shelton, *Quantum Leaps*, 1999). However, subatomic particles are not actual material things; rather, they are probability tendencies—energy with potentiality. This energy is never static. It is always in continuous motion, unceasingly changing from wave to particle and particle to wave, forming the atoms and molecules that subsequently create a material world.

Quantum mechanics, or quantum physics as it is commonly called, differs from classical physics as dramatically as night differs from day. Quantum physicists study the behavior of electrons, protons, neutrons, and the hundreds of even smaller particles called quarks. Classical physicists study material objects in the three-dimensional world. This difference of scale is, however, insignificant compared to the differences in operating principles. The laws that govern the classical realm are in direct opposition to how things work at the subatomic level of the universe.

For example, one of the fundamental laws of classical physics is that things move in a continuous manner. Therefore, if an object is moving in a straight line, it will continue moving in a straight line forever, unless it is acted upon by an outside force. This basic law of motion works very well in the world of everyday experience. It has led us to assume that the entire universe is constant, stable, and predictable. This is, however, an incorrect assumption. At the subatomic level, particles do not move in a continuous manner. Rather, they make unexpected and unexplainable quantum leaps.

These leaps violate our Newtonian sensibilities because they cannot be explained through a process of rational analysis. At the subatomic level, the parts do not determine the behavior of the whole. Rather, the whole determines the behavior of the parts. And, since subatomic particles are capable of interacting across great distances of time and space, a concept referred to as nonlocal causation, the interactions between the whole and the parts can never be precisely known. Therefore, reductionistic processes cannot be used to explain the movement of subatomic particles.

This ability of subatomic particles to interact across time and space in unknown and unknowable ways not only violates Newton’s law of continuous motion, it also violates Newton’s second law of motion which states that every action is accompanied by an equal and opposite reaction. Newton’s second law makes it possible to predict the behavior of objects in the world of everyday experience. However, since subatomic particles have the ability to interact nonlocally, it is impossible to predict their behavior. This does not mean that subatomic particles move in a totally random manner, but it does mean that their movements are not brought about by any discernible local cause. At the subatomic level, the Newtonian concept of predictability must be replaced with the more indeterminate concept of statistical probability.

Perhaps the strangest of the many strange quantum phenomena is the subjectivity of the quantum realm. In the world of everyday experience, the act of observation does not change the nature of what is being observed. This is not so at the quantum level where human observation appears to influence the behavior of inanimate particles. A physicist’s decision about how to observe a photon or an electron will determine whether it behaves as a wave (nonlocalized vibrational energy pattern) or as a particle (localized position in time and space). Capra comments: “If I ask it a particle question, it will give me a particle answer; if I ask it a wave question, it will give me a wave answer. The electron does not have objective properties independent of my mind” (1983, p. 87). At the subatomic level, the objectivity found in classical

physics is replaced by quantum subjectivity. Subatomic interactions are not only unexplainable and unpredictable, they are in some mysterious way affected by the intentions of the observers.

It is quite apparent that the principles of quantum mechanics are directly opposed to the laws of classical physics. Newton's laws, however, still apply in the realm of everyday experience where quantum effects are suppressed by the Correspondence Principle. According to this principle, quantum effects are much too small to make much of a difference under ordinary circumstances (Herbert, 1993). Consequently, quantum concepts have only recently been applied to organizational behavior. Recent research in psychology and biology suggests that human beings are, indeed, quantum beings. Even though people are material beings whose physical bodies are subject to Newton's laws of classical physics, there is also an invisible, nonmaterial dimension (referred to as the mind, consciousness or spirit) whose functioning may be affected by quantum principles (Dyer, 1995; Kilmann 2001; and Shelton, 1999).

Chaos theory differs from quantum mechanics in that it applies to macro systems while the principles of quantum mechanics apply only to the microscopic and submicroscopic dimensions. The development of chaos theory was heavily influenced by the computerized study of weather systems (Briggs and Peat, 1988). Weather systems are inherently chaotic and fundamentally unpredictable; however, when they are plotted in computer phase space over the course of time, even the most chaotic systems never go beyond certain phase space boundaries, the boundary of the *strange attractor*. Strange attractors provide visual evidence of a world in which order lies embedded in apparent chaos. Chaos theory suggests that though all systems, both organic and non-organic, are unpredictable, over the course of time, these systems consistently use chaotic processes as the catalyst for achieving higher levels of order (effectiveness and efficiency).

Complexity theory is a late twentieth-century expansion of chaos theory. As its name implies, this theory focuses on the behavior of complex systems such as organizations. "A complex system is one whose component parts interact with sufficient intricacy that they cannot be predicted by standard linear equations; so many variables are at work in the system that its overall behavior can only be understood as an emergent consequence of the holistic sum of all the myriad behaviors embedded within" (Levy, in Marion 1999, pp. 27-28).

Complexity theorists frequently refer to the *edge of chaos*—the space between chaos and order. This is the area where all systems (human included) appear to function most creatively. When new information is added to static, stable systems, the information becomes frozen and unusable. On the other hand, if the system is too chaotic, the new information gets lost in the static. Therefore, creative transformation—whether biological, psychological, or organizational—is believed to occur when a system is functioning in between the two extremes—poised at the "edge of chaos" (Marion, 1999). Systems must, in fact, be operating at the edge of chaos in order for self-organization to occur.

All three of these "new science" theories, quantum mechanics, chaos theory and complexity theory, have much in common. They all raise questions about the accuracy of the reductionistic, mechanistic, and deterministic world view that emerged from seventeenth-century classical physics. These new theories characterize the universe as a dynamic, unpredictable, subjective, self-organizing system rather than as a static, predictable, objective machine. From this perspective, change is the catalyst for evolution and the basic operating principle of all living systems.

Furthermore, these new science theories all demonstrate that change, even in non-biological systems, typically involves conflict. For example, the very existence of matter is a

result of subatomic particles colliding together. Out of these collisions, matter is birthed. This is a wonderful metaphor for looking at conflict from a new science perspective. From this vantage point, conflict is not only essential, it gives all involved an opportunity to integrate their beliefs with others who have very different ones and out of these collisions, a higher level of personal and organizational functioning emerges.

Each of these new science theories also recognizes that there is inherent order in the universe. This is demonstrated at the physical level by the chemical clock experiments (Prigogine and Stengers, 1984). At the biological level we observe the orderliness of the evolutionary process and the ordering of the seasons. At the organizational level the ability of a system to use chaos to manifest higher levels of order and effectiveness is clearly demonstrated by Greiner's (1991) research on organizational evolution and revolution. Why then do most managers and leaders have such strong needs to control chaos? Why is it that conflict is still so frequently avoided and/or so rigorously monitored and controlled? The authors purport that the answers to these questions are based on the fact that most managers still operate under an outdated scientific paradigm. Our contemporary organizational challenges necessitate a new paradigm and new management skills—skills that are more appropriate for workplaces where change is constant and conflict is pervasive.

The Quantum Skills

While Taylor was promoting scientific management in the United States, Fayol, writing in Europe, developed a set of management skills that supported Taylor's mechanistic world view. Fayol referred to these skills as planning, organizing, directing, and controlling (Robbins, 2001). Even though Minzberg challenged the adequacy of these basic management skills over 30 years ago, textbooks continue to discuss them and managers continue to rely on them. However, in a complex world of continuous change, these skills are rapidly becoming obsolete. They were formulated for life in simpler times when organizations were viewed as stable entities that functioned in a logical, linear, predictable manner. Today's fast-paced, constantly changing, intricately inter-connected world is neither stable nor predictable. A manager's ability to plan, organize, direct, and control is increasingly compromised. Many managers are discovering that stability in organizations can be equated with obsolescence, and prediction and control are often illusionary. Managers have, for the most part, come to accept that change is the only absolute and many frequently comment that "perception is reality." Yet, for the most part, management practices have not kept up with changing assumptions about reality. They, all too frequently, are still reflective of an outdated seventeenth-century world view.

The new sciences provide the conceptual foundation for a new management skill set—a set of skills that can enable managers not only to see conflict from a new perspective, but to respond to conflict in new ways. These skills are called Quantum Skills (Shelton, *Quantum Leaps*, 1999), not solely because they are derived from key principles of the new sciences but, more importantly, because they require a quantum leap into a new management paradigm. The Quantum Skills are defined as follows (Shelton, *Quantum Leaps*, 1999): (1) *Quantum Seeing*: The ability to *see* intentionally. (2) *Quantum Thinking*: The ability to *think* paradoxically. (3) *Quantum Feeling*: The ability to *feel* vitally alive. (4) *Quantum Knowing*: The ability to *know* intuitively. (5) *Quantum Acting*: The ability to *act* responsibly. (6) *Quantum Trusting*: The ability to *trust* life's process. And (7) *Quantum Being*: The ability to *be* in relationship.

The first skill, *Quantum Seeing* (the ability to *see* intentionally), is based on the premise that reality is inherently subjective—it shows up according to the expectations and beliefs (intentions) of the observer. Research in quantum mechanics, human perception, and social construction theory all support the premise that the majority of what is seen in the external world is a function of internal assumptions and beliefs (Wheatley, 1992). Zukav explains:

Reality is what we take to be true. What we take to be true is what we believe.
What we believe is based upon our perceptions. What we perceive depends upon what we look for. What we look for depends on what we think. What we think depends on what we perceive. What we perceive determines what we believe.
What we believe determines what we take to be true. What we take to be true is our reality (1979, p. 310).

Hence, beliefs reinforce perceptions and perceptions reinforce beliefs. Consequently, most people stay stuck in an on-going cycle of repetitiveness, seeing the world as they have always seen it and living their lives within a very narrow band of possibility, not because life is limited, but because perceptions always are.

Csikszentmihalyi (1990) believes that intention is the psychological process through which reality is constructed. Intentions direct attention to certain stimuli causing a plethora of other perceptual possibilities to be ignored. The skill of *Quantum Seeing* enables managers to consciously select their intentions. For example, when conflict occurs the quantum response would be for those involved to willingly explore their own assumptions and beliefs about the other(s), searching for the underlying intentions (assumptions, beliefs) that are creating conflict. Not only would each party fully recognize the relationship between internal cognitive processes and external perceptions. Each would also set clear intentions for the situation—visualizing and affirming a positive resolution; knowing that “thoughts held in mind, produce after their kind.”

A manager who is competent in the skill of Quantum Seeing would model the ability to identify and test assumptions and beliefs (Nelson and Quick, 1994; and Senge, 1990). Such a manager might use processes such as Argyris’ (1993) “two-column” technique, thus inviting those people involved in conflict to track their conversations—writing what they say in the right column and what they think in the left. Or, the manager might introduce Senge’s (1990) “ladder of assumptions” as a process that participants can use to identify the underlying assumptions and beliefs that are triggering conflict. These quantum managers would also be careful to state all their observations of the conflict as subjective perceptions, rather than as established facts. In so doing, the manager gives those involved in the conflict the right to have differing perceptions. This does not mean there is no “right” interpretation, it simply indicates that the manager does not presume to perceive reality more accurately than others who are also involved.

The second skill, *Quantum Thinking* (the ability to *think* paradoxically), is derived from quantum physics research that suggests the universe often functions in illogical, paradoxical ways. The most obvious quantum paradox is that the visible, three-dimensional world is composed solely of invisible energy. Furthermore, this energy makes sudden, totally unpredictable quantum leaps, tunneling through barriers in ways that are both illogical and impossible at the macro level of reality.

Attempts at conflict resolution typically bring the participants face-to-face with the power of paradox. Often each party’s desired solution appears to be paradoxically opposed to the other(s). These opposing desires make win-win resolutions difficult. Because of the paradoxical positions of seemingly opposing needs/desires, win-win solutions are frequently sought but rarely achieved (Cosier & Ruble, 1981; Covey, 1989; Filley, House & Kerr, 1976; Nelson &

Quick, 1994; Robbins, 2001; and Thomas, 1976). Other outcomes (e.g., win-lose, lose-lose) are much more prevalent. Perhaps it is because win-win solutions to conflicts involving positions that are directly opposed are unlikely to be achieved through linear problem-solving processes—the traditional conflict management approach. This traditional problem-solving approach to conflict resolution is, in fact, a derivative of the scientific method. Such an approach is grounded in Newtonian logic and leads to polarized, either/or thinking (Hampden-Turner, 1981).

Win-win solutions require paradoxical thinking skills. They require the ability to find a fully acceptable solution to divergent points of view. Lewis (2000) points out that the tension arising from such perceived paradoxes is the result of cognitively or socially constructed polarities that actually mask the simultaneity of seemingly conflicting truth. Ford and Backoff agree. They discuss how paradoxes are socially constructed “things,” perceptual polarities that must be reconciled (1988). Vince and Broussine suggest that the ability to reconcile opposite positions is at least partly a function of shifting perception by being willing to stay with the tension until win-win options emerge. They comment: “Staying with the paradox makes it possible to discover a link between opposing forces and opens up the framework that gives meaning to the apparent contradictions” (1996, p. 4).

It is possible for people to learn to see beyond the paradox and find win/win solutions. However, in order to think paradoxically, managers must awaken the capacities of the right hemisphere of the brain. The right hemisphere of the brain “thinks” in images, not words and is, therefore, not bound by verbal language and logic. The right brain can gather up seemingly opposite ideas and merge them into highly creative solutions; thereby bypassing the left brain’s propensity for binary thinking. The right brain has another important creative advantage. It can process millions of visual images in microseconds, thereby solving problems exponentially faster than the clock-bound left hemisphere. Thus, through the process of imagistic thinking, those involved in conflict can escape the tyranny of time and enter a realm where seemingly opposite options effortlessly superimpose themselves into highly creative win-win solutions. For example, managers in conflict over resource allocations (e.g., budget, staff, equipment) who use this skill can discover highly innovative ways to move beyond compromise (lose/lose) to authentic collaboration (win/win). By engaging the creative capacity of the right brain, they discover ways to creatively share the previously fought-over resources or, perhaps, generate new ones, thus moving from a position of frustration and lack to one of innovation and possibility thinking.

The third skill, *Quantum Feeling* (the ability to *feel* vitally alive), is based on the premise that humans are composed of the same energy as the rest of the universe and are, therefore, subject to universal laws of energy excitation. Research at the Institute of HeartMath suggests that the human heart is a primary source of power for the mind-body system (*IHM Research Update*, 1993). The heart generates the strongest electromagnetic signal in the human body and the power of that signal is primarily a function of thoughts and emotions. Negative emotions (e.g., frustration, fear, anger, or stress) decrease coherence in the heart’s electromagnetic waves, causing the mind-body system to lose energy. Positive emotions (e.g., love, caring, compassion, and appreciation) increase coherence, thus increasing energy.

This research confirms what most managers intuitively know. Negative emotions exhaust and positive emotions energize. Knowing this to be true does not, however, seem to reduce the amount of stress and conflict that is pervasive throughout the business world (Nurmi & Darling, 1997). Fast-paced schedules drain energy. Stress-filled jobs exhaust. Managers desire health and vitality; but, too often, they experience dis-ease, often in the guise of conflict. The skill of

Quantum Feeling enables managers to feel good internally, regardless of what happens externally. As they use this skill they learn how to change the physics of their bodies by changing the feelings of their hearts (Dyer, 1998). They become increasingly aware of the perceptual choice point between every external stimulus and subsequent internal response and they begin to recognize that energy is never depleted by other people or events but rather by perceptual choices.

Institute of HeartMath research suggests that managers can maintain high levels of energy and vitality simply by choosing to focus on the positive aspects of all events (Childre, 1996). Seeing negative events from a positive perspective does require paradoxical thinking skills. Appreciative Inquiry is an excellent example of an organizational development process that is congruent with this skill. Appreciative Inquiry, or AI as it is commonly called, is based on the assumption that change happens more effectively and more efficiently when managers focus on what is going well rather than focusing on the conflicts that need to be resolved or changes that need to be made. At first blush, this approach seems totally illogical, but organizations such as Avon, Wendy's and GTE have achieved remarkable results by choosing to use an appreciative approach to tackle tough organizational problems ranging from diversity issues to management retention (Cooperrider, Sorensen, Whitney, & Yaeger, 2000).

A manager committed to this approach might challenge those in conflict to identify at least three things that they agree on or one thing they appreciate about each other. The manager might also invite those in conflict to participate in playful, paradox-focused brainstorming, creating a mind map of "impossible" win-win solutions. There are many possibilities but none of them would involve the traditional logical, linear conflict management approach and all of them would hinge upon the quantum assumption that reality is essentially paradoxical and that conflict has within it a gift that surfaces through the act of appreciation.

The fourth skill, *Quantum Knowing* (the ability to *know* intuitively), is derived from quantum field theory. Energy fields are, in the language of physics, the ground state of all that is. Einstein once commented: "fields are the only reality" (Capra, 1983, p. 211). The universe is not filled with energy fields; rather, the universe emerges out of an underlying quantum field. This underlying sea of potential appears to be infinite, omnipresent and omnipotent. It is both indescribable and incalculable. The quantum field is believed to contain Bose-Einstein condensates—the most highly ordered and highly unified structure yet found in the universe. Zohar (1990) is one of a growing number of scientists who believe that Bose-Einstein processes in the brain may create the neurological structures that are prerequisite to human consciousness. If subsequent research validates a relationship between Bose-Einstein condensates and consciousness, it will lend support to the hypothesis that the quantum field itself is conscious. Consciousness, therefore, may not be a function of evolutionary sophistication, but instead may be the primary substance of physical reality. Wald explains:

Mind, rather than emerging as a late outgrowth in the evolution of life, has existed always as the matrix, the source and condition of physical reality...the stuff of which physical reality is composed is mind-stuff. It is mind that has composed a physical universe that breeds life, and so eventually evolves creatures that know and create (1984, pp. 1-2).

It is intriguing to imagine an organization filled with people who know how to use their individual minds to intuitively access this cosmic mind-stuff. Research suggests that the majority of CEOs do acknowledge a strong reliance on intuition, but few of them make their intuitive abilities public and even fewer attempt to propagate and integrate intuitive knowing into daily

organizational practices (Parikh, Neubauer, & Lank, 1994). However, as we approach the twenty-first century, the overwhelming amount of available data mandates new ways of knowing. There is simply not enough time to conduct problem solving and conflict resolution using traditional, linear models.

Langer has developed a theory of mindful decision-making (McCarthy, 1994). Her research suggests that gathering information does not necessarily lead to better decisions. In fact, she thinks that organizations are focused on an impossible goal—reducing uncertainty through data collection. This is futile because even the amount of information that could be gathered about the simplest of decisions such as developing a new product or selecting a supplier can involve limitless research. Rather than focusing on gathering information, Langer’s theory focuses on staying aware (mindfulness). She points out that a belief in certainty is actually a huge disadvantage. Certainty leads to mindlessness. When we are certain we cease to pay attention. On the other hand, uncertainty keeps us attentive both to the world outside of us and to our internal intuitions. Mindfulness keeps our connection to the quantum field of infinite information open.

Managers who utilize the skill of Quantum Knowing might respond to conflict by intentionally creating a climate of mindfulness—an environment where Accelerated Learning techniques (e.g., sound, color, and fragrances) are used to evoke a more centered response from those experiencing negative emotions (Rose & Nicholl, 1997). Managers might also use guided imagery to help those in conflict access higher levels of intuitive knowing, thus discovering win-win solutions to their thorniest issues. Or managers might bring in a martial arts master to demonstrate new ways of thinking about and responding to conflict. Perhaps more important than any of the above, new science managers would develop their own intuitive skills by integrating times of daily reflection and contemplation into their busy routines, taking time to hone their intuitive guidance systems so that they can bring more wisdom and understanding to the conflicts around them.

The fifth skill, *Quantum Acting* (the ability to *act* responsibly), is premised on the quantum concept of interconnectivity and its byproduct nonlocal causation. At the subatomic level two systems once connected remain connected, even across great distances of time and space. Any measurement of one of these systems affects the second system instantaneously. These complex “from a distance” interactions are explained by a uniquely quantum principle, the principle of nonseparability, which violates the most basic principle of relativity—that nothing can travel faster than the speed of light.

Even though Einstein never accepted the principle of nonseparability, today this principle is a fundamental concept in quantum theory. Its technological applications will soon create quantum computers in which all the components respond instantaneously to a change in the state of one component. The potential capacity of quantum computers is mind-boggling. They will be capable of performing all possible computations simultaneously (quantum parallelism). Strings of hydrogen atoms will hold bits of information rather than arrays of transistors. Atomic encoding will enable a quantum computer to simulate the behavior of any quantum system using quantum processes such as superimposition and nonlocal correlation. According to a *Scientific American* article, “a 40-bit quantum computer could re-create in little more than, say, 100 steps, a quantum system that would take a classical computer, having a trillion bits, years to simulate” (Lloyd, 1995, p. 144).

Action at a distance (nonlocal causation) is about to transform organizations through astounding technological advances; but more importantly, this same principle has the potential to

shift managers' view of themselves and their relationship to others and to the universe. Gribbin explains why:

They [research studies] tell us that particles that were once together in an interaction remain in some sense parts of a single system, which responds together to further interactions. Virtually everything we see and touch and feel is made up of collections of particles that have been involved in interactions with others right back through time, to the Big Bang in which the universe as we know it came into being. The atoms in my body are made of particles that once jostled in close proximity in the cosmic fireball with particles that are now part of a distant star, and particles that form the body of some living creature on some distant, undiscovered planet. Indeed, the particles that make up my body once jostled in close proximity and interacted with the particles that make up your body (1984, p. 229).

Everything in the universe is a part of a correlated, complex whole in which each part influences and is influenced by every other part. This quantum principle of nonseparability puts a new spin on conflict. If everything in the universe is intricately interconnected, a manager's thoughts affect the entire system (team, department, organization). Therefore, if managers want their associates to demonstrate new ways of viewing and responding to conflict, they begin by modeling this new perspective—knowing that as they change their thinking and acting, they literally transform the surrounding energy field.

Each new perceptual choice not only influences the manager's future reactions; it also, because of quantum interconnectedness, affects everyone else as well. Thus, managers design their lives and their workplaces one choice at a time. When they choose acts of kindness, compassion, or integrity, they are, in the words of Zohar "loading the quantum dice," and increasing the probability that others will choose to act accordingly (1990, p. 184). Each individual self is in nonlocal correlation with every other self, and each management thought and action influences the entire system.

The sixth skill, *Quantum Trusting* (the ability to *trust* life's process), is derived from chaos theory. Chaos theory, as discussed earlier, provides a new way of viewing change and the turbulence that accompanies it. This theory demonstrates that chaos is inherent in the evolutionary process. It is the catalyst that creates the disequilibrium necessary for system evolution. Chaos is the progenitor of all progress. Without the chaos of change, life stagnates and entropy ensues.

The ability of a system to self-organize within the boundaries of a strange attractor, is a fundamental concept in the study of chaos. Strange attractors provide managers with visual images of a world in which structure emerges out of chaos. Structured chaos is a remarkable paradox. It suggests that the universe is both orderly and chaotic, a world that displays structure without clockwork regularity—potentiality without predictability. Wheatley and Kellner-Rogers reflect on what this might mean for managers dealing with conflict. They write: "If order is for free, we don't have to be the organizers. We don't have to design the world. We don't have to structure existence...Organization wants to happen" (1996, p. 35).

For some managers, this is deeply appealing. These managers are exhausted from their attempts to predict and control. They suspect that there really is a simpler way. Yet, they continuously find themselves face-to-face with turmoil and tension. *Quantum Trusting* is the ability to trust life's process. This skill enables managers to ride the rapids of conflict, fully participating in the drama without attempting to actively manage the course of resolution. As

managers use this skill they become less intent on manipulating the world and more intent on simply appreciating it. They allow self-organization to occur.

Using the skill of *Quantum Trusting* is especially challenging in traditional workplaces where enormous value is placed on stability and control. This skill requires managers to confront their own internal demons of dependency and control. It takes clear intention, strong commitment, and daily practice to take the road less traveled. Managers must be willing to temporarily step into the chaotic abyss if authentic “self” organization is to occur. However, this skill does not imply that managers ignore conflict. It simply suggests that they guard against intercepting or resolving conflict for others. Rather they support those in conflict, encouraging them to use their inner wisdom to discover innovative win-win solutions. To use the terminology of chaos theory, managers would act as a source of continuous feedback, sharing their observations of the others’ behavior, then sitting by as that feedback is folded back into the consciousness of those in conflict (iteration). If enough factual, non-judgmental feedback is provided (within a safe and supportive energy field), it is highly probable that those in conflict will eventually arrive at a bifurcation point—a point where perceptual transformation occurs.

The final skill, *Quantum Being* (the ability to *be* in relationship), recognizes the relational nature of the universe. At the subatomic level, matter comes into being only through relationships. Subatomic particles are abstractions. Their properties are definable and observable only through their interactions with other particles. The probabilities associated with particles are probabilities of relationships. Physics has not, however, always been viewed as a science of relationships. Newton saw particles as distinct entities with rigid boundaries, billiard balls moved around by external forces (Zohar, 1990). Newtonian objects can influence each other’s external behavior, but they can not change each other’s internal characteristics. This is not what happens in a quantum relationship where two particles can actually merge together, sharing boundaries and identities, thus becoming a quantum system that is greater than the sum of the two individual parts.

A quantum relationship—the ability to literally become so connected to another that one can see the world through the other’s eyes—is prerequisite to win-win conflict resolution. It is through such relationships that the ego’s fears and subsequent defensiveness are transcended. When managers approach all their relationships with authenticity and vulnerability, they model a new way for those around them. These quantum encounters provoke unresolved issues and reopen prior psychological wounds, thus giving each party the opportunity to learn and heal or deny and project. As people experience the perceptual transformations that are inherent in quantum relationships, they begin to understand that their outer realities are but a projection of their inner beliefs. Quantum relationships are, therefore, psychological mirrors. In them people can see themselves reflected. When they see faults in another, their observations are simply mirroring their own issues, providing feedback about unhealed areas of their own souls (Argyris, 1993).

Quantum Being is the ability to be in a relationship of unconditional positive regard. As managers use this skill, they begin to own their feelings rather than project them onto others. As they do so, others around them discover that all relationships are extraordinary learning opportunities; and, conflict begins to generate fewer negative emotions. New levels of appreciation and respect emerge. Over the course of time, everyone begins to suspect that no conflict occurs without reason. They also discover that those who have the most to teach are not always their favorite people, but they are the most valuable contributors to their psychological

and spiritual well-being. In short, everyone within such an evolved system will begin to embrace conflict, recognizing that it is nature's way of assuring continuous improvement.

Summary and Conclusions

Managers have typically felt uncomfortable with conflict, attempting to avoid it whenever possible or rigidly manage it in those situations where it was impossible to avoid. However, a different view of conflict emerges from the new sciences. Rather than keeping the peace at all costs, "new science" managers recognize that in many instances conflict is both healthy and necessary (Hellriegel, Slocum & Woodman, 1995). Conflict is the precursor of change. Change leads to adaptation, and adaptation leads to transformation. The alternative to change is stagnation and decay.

However, if managers are to fully integrate a new, more relevant scientific theory of management into their organizations, the organization development profession must lead the way, introducing and modeling new responses to conflict. Teambuilding is not always the correct intervention. Peace and tranquility are not always desirable. Creating the right degree of disequilibrium is a key twenty-first-century O.D. competency.

Additional research is, of course, needed—research that tests this paper's assumptions in small work groups and in large organizations. For example, is it possible to change people's perceptions of and responses to conflict by teaching them the quantum skills? If so, what are the most effective teaching methodologies? Do these skills affect job performance, job satisfaction, and organizational commitment? Is there more measurable innovation in groups that possess these skills than in those without them—especially as it relates to processes for dealing with conflict?

Organization development professionals can act as thought leaders, championing these research initiatives while encouraging those around them to become authentic change masters, changing themselves and their organizations from the inside out. These change masters will eventually transform their static, mechanistic workplaces into fluid, dynamic quantum organizations—organizations poised at the edge of chaos, creatively and constructively harnessing the transformational power of conflict.

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