**“If you only have a hammer”**by Charlotte Shelton - WiseWork

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The well-known motivational theorist, Abraham Maslow, once commented: "If the only tool you have is a hammer, you will see every problem as a nail." Today many people are attempting to create organizational transformation using a hammer and nail mentality. They diligently hammer
away at issues with logical, linear action plans, attempting to create major change with minimal chaos. Consequently, the results of their new initiatives are often merely incremental and sometimes only cosmetic.

If we are to re-create our organizations for the twenty-first century, we must release our outdated beliefs about the way the world works and we must replace our time-worn hammers with a radically new tool kit. Such a kit would contain new skills-skills that are congruent with the
new paradigm view of organizations as unpredictable, interactive, living systems, rather than stable, clock-like machines.

Since the business tools of planning, organizing, directing, and controlling are derivatives of classical Newtonian physics, perhaps we can look to quantum physics for an updated skill set. Though many new paradigm writers prefer to use a biological metaphor, the basic principles of quantum mechanics provide radical [and useful] insights into a world that is both objective and subjective, logical and irrational, linear and nonlinear, orderly and chaotic; a world in which human observation somehow affects that which is observed. In short, the principles of quantum mechanics challenge us to turn our view of reality upside down and acknowledge that there is much more to life than meets the eye.

These quirky quantum concepts can be translated into a highly practical skill set. I call these skills Quantum Skills because they are premised on the assumption that the quantum realm of energy is primary or causal and the material world is secondary. The skills are:

Quantum Seeing: The ability to see intentionally

Quantum Thinking: The ability to think paradoxically
Quantum Feeling: The ability to feel vitally alive
Quantum Knowing: The ability to know intuitively
Quantum Acting: The ability to act responsibly
Quantum Trusting: The ability to trust life’s process
Quantum Being: The ability to be in relationship

These Quantum Skills are ancient and futuristic, scientific and spiritual, simple and difficult. They are key skills for the new millennium but they originated in the mystical wisdom of ages past. Many of the world’s ancient spiritual practices, as well as many state-of-the-art psychological theories, are based on concepts that are similar to the quantum mechanical principles from which these skills are derived.

The first skill, **Quantum Seeing**, is based on the premise that we live in a subjective universe. Both quantum theory and contemporary research in human perception suggest that over eighty percent of what we see in the external world is a function of internal assumptions and beliefs. Yet we, for the most part, continue to live our lives and manage our organizations with little regard for the subjectiveness of external reality. The word reality is derived from the Latin words for think (revi) and thing (res). Reality, or at least our individual experience of it, is directly related to those things we think about. WBA Fellow Gary Zukav summed it up well in his classic book The Dancing Wu Li Masters. He writes*: 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*. (1)

Hence, our beliefs reinforce our perceptions and our perceptions reinforce our beliefs. Consequently, we stay stuck in an on-going cycle of repetitiveness, seeing the world as we have always seen it and living our lives within a very narrow band of possibility, not because life is limited, but because perceptions always are. Unfortunately, it is often difficult to change our perceptions. They are learned early and they are controlled primarily at an unconscious level of awareness. However, we can learn to become more aware of our intentions and as we learn to
change our intentions, our perceptions shift accordingly. University of Chicago psychologist Mihaly Csikszentmihalyi believes that intention is the psychological process with which we construct reality. Our intentions cause us to pay attention to certain stimuli while totally ignoring a plethora of other perceptual possibilities. The skill of Quantum Seeing enables us to consciously select our intentions, thus aligning our perceptions with our desires. For example, if we set a clear intention to improve our health, we will begin to notice (attend to) information that we normally would not have perceived. We may begin to read the labels on the food we purchase. We may begin to notice the local health club ads, or we may suddenly see available space on our calendar for daily exercise. This information was, of course, already available to us. It was, however, perceptually ignored until we made a conscious intention that shifted our attention. Clear intention serves as a magnifying glass. It gives us a new lens through which we can make new perceptual choices–choices we otherwise would have missed. Can you imagine how different the workplace (and the world) would be if we were all able to create intentionally, fully conscious of the role that intention plays in all that we see and experience? Well known
techniques like affirmations, dream boards and mind maps can serve as reminders of our intentions. As we use these verbal and visual aids, we become increasingly more conscious of our intentions and our attention spontaneously follows. At the organizational level, this skill reminds us of the need to have all stakeholders involved in visioning and planning processes. If employees are not involved, they are likely to be perceptually incapable of seeing and, hence, of creating new possibilities. Instead, they remain stuck in their current mindsets, unable to make the perceptual choices required for successful execution.

The second skill**, Quantum Thinking**, is derived from quantum physics research which suggests that 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. For example, microscopic electrons are able to tunnel through energy barriers that macroscopic objects would be unable to penetrate. This is not only irrational; it is a major paradox, since the electron on its way through the barrier has negative kinetic energy–a classical absurdity.

Quantum tunneling is totally illogical; yet it is the basis of the Josephson junction, a key process in superconductivity. Josephson junctions operate as extremely fast switching devices. They are a key design feature in a highly sensitive measuring instrument called a SQUID (superconducting quantum interference device). Because of the highly illogical quantum tunneling effect, physicians can now identify minute abnormalities within the human brain. Illogical processes can result in highly practical applications.

Unfortunately, many of us still rely primarily on logical, linear, black-and-white thinking skills. U.C. Berkeley psychologist Eleanor Rosch believes that our obsession with binary thinking originates in the structure of the brain. Over the centuries the human brain has added
layers, evolving from the early reptilian, to the limbic, to the much more recent neocortex (outer layer of the brain). The two lower brain centers are actually incapable of conceptualizing multiple options. So even though the neocortex can create and choose among unlimited options, much of the time we still operate out of our lower brain centers, categorizing and organizing information with minimal cognitive effort. Our logical, linear educational systems and our either-or workplaces reinforce this neurological propensity. Consequently most of us
demonstrate less than ten percent of the creativity of a typical five-year-old.

As we enter the twenty-first century, it is apparent that our logical, rational, binary thought processes are inadequate. Logical thinking has made little headway in solving the enormous problems facing the world and its organizations. After all, many of our organizational issues are
paradoxical, both/and questions that cannot be answered by rational, binary thinking. For example, how can we balance responsibility to stockholders with responsibility to employees, customers, and the environment? How can we hit short-term targets and maintain a long-term
focus? Or, how do we decrease errors and improve speed? The ability to think paradoxically might be the key to creating highly innovative solutions to these questions and a myriad of other twenty-first century organizational challenges.

In order to think paradoxically we must awaken the capacities of the right hemisphere of the brain–this side 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 unrelated ideas and arrange them
into highly creative idea constellations, 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.

Each time we choose to visualize versus think in words, we literally disconnect from the linear passage of time. Thus, through the process of imagistic thinking we escape the tyranny of time and enter a realm where seemingly opposite options can effortlessly superimpose themselves into highly creative solutions. The skill of Quantum Thinking provides an on-going stream of highly innovative, often illogical ideas that help us transcend the box of binary thinking. Our ability to thrive, and perhaps survive, demands that we learn to use this skill.

The third skill, **Quantum Feeling**, is based on the premise that we, as human beings, are composed of the same energy as the rest of the universe and are, therefore, subject to universal laws of energy excitation. Recent research at the Institute of HeartMath suggests that
the human heart is a primary source of power for the mind-body system. 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 we already know intuitively. Negative emotions exhaust us and positive emotions energize. Knowing this to be true does not, however, solve the pervasive epidemic of stress and burnout that is sweeping this country. Fast-paced schedules drain our
energy. Stress-filled jobs exhaust us. We desire health and vitality, but, too often, we experience tiredness and dis-ease. The skill of Quantum Feeling enables us to feel good internally, regardless of what happens externally. As we practice this skill we learn how to change the
physics of our bodies by changing the feelings of our hearts. We become increasingly aware of the perceptual choice point between every external stimulus and subsequent internal response and we begin to recognize that our energy is never depleted by other people or events but rather by our perceptual choices.

The Institute of HeartMath research suggests that we can maintain high levels of energy and vitality simply by choosing to focus on the positive aspects of all the events in our lives. Seeing "negative" events from a positive perspective does require us to think paradoxically. If we suddenly find ourselves without work, it is only logical to catastrophize. However, if we do so, we will only see those perceptual clues that support our negative thinking. We’ll see our bills
accumulating. We’ll see a tight job market. We’ll see unemployed people everywhere we turn.

On the other hand, if we can view the situation in an "irrational way," seeing it with appreciation, we will begin to see the hidden blessings. As we focus on the positive aspects, our heart’s electromagnetic waves become coherent and the brain’s waves spontaneously follow (physicists call this entrainment). From this more coherent state of mind, we see opportunities that we would have missed had we remained stuck in negativity. The opportunities would have been there all along; our emotionally-induced cognitive incoherence simply made them perceptually unavailable to us.

Until each of us learns how to create high energy lives, organizational change programs will make no real difference in either productivity or job satisfaction. Workplace redesign efforts and empowerment processes are necessary but not sufficient. It’s the new-wine-in-old-wineskins
phenomenon or, in more contemporary language, the second-marriage-same-spouse syndrome. Without an internal shift in consciousness and a new set of emotional choice skills, we keep re-creating the old patterns in our lives, regardless of the new opportunities available to us.

The skill of Quantum Feeling enables us to change the constructs of our minds. Think of the impact such a skill would have on issues such as motivation, burnout, stress and job satisfaction. Imagine how organizational life might change if we released our collective
dependence on external rewards and each took full responsibility for bringing purpose, passion and vitality to our work.

The fourth skill, **Quantum Knowing**, is derived from quantum field theory. Energy fields are, in the language of physics, the ground state of all that is. Einstein once commented that "fields are the only reality." 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 which are the most highly ordered and highly unified structure yet found in the universe. Physicist Danah Zohar 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. Nobel laureate George 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 physical universe that breeds life, and so
eventually evolves creatures that know and create.* (2)

The universe is basically a set of signals or a field of information. It is much more like a Great Thought than the Great Machine metaphor of the Newtonian paradigm. Quantum Knowing is the ability to connect in non-sensory ways with information in this quantum field of potentiality.
William James used the Greek word noetic to describe the process of direct knowing–knowing without sensory input. WBA Fellow Jean Houston explains this ability by using the metaphor of superconductivity. She writes:

*In most electrical flow systems there is a resistance, analogous to a turned-on light bulb impeding the flow of current, which creates the practical uses for the electrical current. But in superconductive states the electrons can flow unimpeded in perpetual motion through a flow
loop. This may be what is happening in the experience of deep meditation: neurons become superconductive flow systems, phase-coherent with other neurons by virtue of quantum tunneling. Resistance is overcome, the usual kinds of perceptual and psychological lenses are no longer operative, and the brain becomes a very different instrument, one that is available to receive messages from the primary reality.* (3)

In this superconductive state, our ability to access previously unknown information soars. We discover a capacity for wisdom that may be infinite. We become one with the quantum field. Can you imagine an organization filled with people who know how to intuitively access the cosmic database? 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. However, as we approach the twenty-first century, the overwhelming amount of available data mandates new ways of knowing. There is simply too much information to process in traditional, analytical ways.

Ellen Langer, professor of psychology at Harvard University, has developed a theory of mindful decision making. Langer’s 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 buying a copier 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.

As we begin to incorporate the space for mindfulness into our daily work routines, we will create whole-brain organizations–organizations that fully utilize both sides of the brain, valuing intuitive knowing as much as rational analysis. Someday we will look back at concepts such as empowerment or open book management with amusement. After all, how can one person empower another if we all have access to the same cosmic database? As more and more of us learn to use the skill of Quantum Knowing, we will create true learning organizations–organizations in which all the stakeholders deeply value learning from the inside out.

The fifth skill, **Quantum Acting**, is premised on the quantum mechanical 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 relatively–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 recent 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." (4)

Action at a distance (nonlocal causation) is about to transform life as we know it through astounding technological advances; but more importantly, this same principle has the potential to shift our view of ourselves and our relationship to each other 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*. (5)

Everything in the universe is a part of a correlated, complex whole in which each part influences and is influenced by every other part. Quantum Acting is the ability to act with concern for the whole–the whole self, the whole society, and the whole planet. We use this skill to design lives of impeccable action; lives that focus on intentions that are good for both self and for the larger system.

Using the skill of Quantum Acting means that we choose to make responsible choices. A life of responsible choice mandates a commitment to making our choices ever more conscious. Each conscious choice that we make not only influences the probability of our future choices; it also,
because of our quantum interconnectedness, affects everyone else’s future choices as well. Thus, we design our lives and our workplaces one choice at a time. When we choose acts of kindness, compassion, or integrity, we are, in the words of Danah Zohar, "loading the quantum dice," and increasing the probability that others will choose to act accordingly. Each of our
individual selves is in nonlocal correlation with every other self, and each of our decisions influence the entire system.

The quantum principle of nonseparability puts a new spin on social responsibility. If everything in the universe is intricately interconnected, what we do has to in some way affect us, the doers.
Therefore, if we want prosperity in our lives or in our organizations, we begin by giving generously. In a correlated universe, the more we give, the more we receive. Our so-called socially responsible behaviors (e.g., treating all stakeholders respectfully or taking good care of
environmental resources) are in actuality merely common sense. As we begin to use the skill of Quantum Acting, we discover that our organizations can, indeed, do well while also doing good.

The sixth skill, **Quantum Trusting**, is derived from chaos theory. Chaos theory provides us with 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.

Nobel Prize winning chemist Ilya Prigogine was the first to point out the positive role that chaos plays in the universe. Prigogene acknowledges that not all chaos leads to evolution and differentiates between active and passive chaos. Passive chaos occurs when a closed
system reaches equilibrium and its elements move around in a random fashion. Active chaos occurs in an open system that is in a state of disequibrium. In such a system, environmental feedback serves as a catalyst, disrupting the system and moving that system to higher levels
of order and coherency.

The system’s new direction appears to be the result of chance and uncertainty. However, a growing number of scientists believe that an invisible ordering principle is at work. David Bohm’s concept of subatomic particles with "quantum potential" suggests that directions received from the primary order, the quantum field, influence an electron’s behavior at a bifurcation point. Bohm acknowledges that this potential has such complexity that any attempts at prediction are
futile. Our inability to make predictions does not mean that a system’s evolution is totally random. It simple means that it cannot be explained.

Bohm’s concept of an invisible ordering principle applies to the subatomic world of quantum phenomena. Chaos theory, based on classical physics and applicable to the macroscopic world, has a similar concept, the strange attractor. This is a computer term used to trace the
evolution of a chaotic system. As chaos theory would predict, a computerized system in chaos behaves in a totally unpredictable manner. However, 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 images of a world in which structure emerges out of chaos. Structured chaos is a remarkable paradox. It suggests that we live in a universe that is both orderly and chaotic, a world that displays structure without clockwork regularity–potentiality
without predictability. WBA Fellow Meg Wheatley and Myron Kellner-Rogers in their thought-provoking book, a simpler way, reflect on what this might mean for us as human beings. 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."* (6)

For many of us, these ideas are deeply appealing. We are exhausted from our attempts to predict and control. We suspect that there really is a simpler way. Yet, we continuously find ourselves face-to-face with the ego’s fears. Quantum Trusting is the ability to trust life’s process.
This skill enables us to ride the rapids of change, fully participating in the adventure without attempting to control the course; deeply aware that it’s easiest to ride a raft in the direction it’s headed. As we use this skill we begin to focus on the mystery of life, rather than on mastery over it. We become less intent on manipulating the world and more intent on simply appreciating it. In other words, we let life happen.

Using the skill of Quantum Trusting is especially challenging in traditional workplaces where enormous value is placed on prediction and control. There are, however, many new organizational processes like Harrison Owen’s Open Space Technology, which demonstrate in quantifiable ways the ability of a group of people to quickly self-organize in meaningful and productive ways. Not only are the outcomes of such meetings impressive, participants almost always prefer this design to more traditionally structured meeting options.

Open Space Technology is only one example of what Dee Hock would call a chaordic organization. As we individually and collectively begin to use the skill of Quantum Trusting, many more examples of self-organizing practices will emerge. Championing these practices requires each of us to confront our own internal demons of dependency and control. It takes
clear intention, strong commitment, and daily practice to take the road less traveled. We must be willing to step into the chaotic abyss.

The final skill, **Quantum Being**, 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. Newtonian objects can influence each other’s external behavior, but they cannot 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 and becoming a quantum system that is greater than the sum of the two individual parts.

Metaphorically quantum relationships are prerequisite to human transformation. It is through relationships that we release our creative potential. When we approach relationships with openness and vulnerability, a new entity is created that is greater than the sum of the two individuals. These quantum encounters provoke unresolved issues and reopen psychological wounds, thus giving each party the opportunity to learn and heal or deny and project.

As we experience the perceptual transformations that are inherent in quantum relationships, we begin to understand that our outer realities are but a projection of our inner beliefs. Quantum relationships are, therefore, psychological mirrors. In them we can see ourselves reflected. When we see faults in another, our observations are simply mirroring our own issues, providing us feedback about unhealed areas of our own psyche.

Quantum Being is the ability to be in relationship–a relationship based on unconditional positive regard. This skill enables us to own our feelings rather than project them onto others. As we do so, we discover that all of our relationships are extraordinary learning opportunities. And, we begin to suspect that none of them occur without reason. We also discover that those who have the most to teach us are not always our favorite people, but they are the most valuable contributors to our psychological and spiritual healing.

If we are to fully integrate the skill of Quantum Being into our organizations, we must turn our workplace priorities upside down, creating the time and space for dialogue, trusting that improved relationships will translate into improved results. In so doing, we will discover that profit is a byproduct of partnership and we will put away our Newtonian hammers and become authentic change masters, changing ourselves and our organizations from the inside out.

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