Many organizations have attempted to create system-wide solutions through the use of traditional change methodologies. While these approaches have proven to be successful within organizational subsystems, their impact on the total organizational system has repeatedly fallen short. Many of these shortcomings have been illustrated with the exploration of the new sciences. The problem is that these explanations are often limited to theoretical discussions, with little attention dedicated to practical applications. This article examines the results of some recent research, which illustrates that by creating a replica of the chaos and need for rapid response that organizations face in the real world in a small, safe experiment, participants rapidly acquire critical new competencies in information sharing, relationship-building and the co-creation of identity.

In their book *Large Group Interventions* (1997), Barbara Bunker and Billie Alban examined twelve different Large Group Intervention (LGI) models. Each of these models is designed to enable the organization to identify the need for change, evaluate the current state of the system, generate a preferred future and emphasize strategy implementation. This article illustrates how at least one of these models, Whole Scale™ Change, embraces the concept of chaos theory and then moves to the next level by providing a method to operationlize these concepts into organizational change.

Whole Scale™ Change:
Whole Scale™ Change is a model that can be used for many purposes at various levels and at different stages of the change process. It's primary intent is to create "critical moments" across the entire system to develop a "one-brain, one-heart" organization. In their consultant guide *Real Time*

Strategic Change (1994), Dannemiller Tyson and Associates state "we believe that complex system-wide problems cannot be resolved by piecework solutions. Real wisdom and synergy come from the inter-connectedness of *relationship, identity and information.*" They then go on to say "the solutions that will evolve from the whole system will be very different than the solutions that will evolve from an individual or small group. No one operating group contains enough information to make system-wide decisions." If the power of organizational change lies within relationships, information and identity; then a systems thinking perspective must be applied to create meaningful and sustainable change.

The findings cited throughout this article are a result of three organizational case studies (Arena, 2000) that evaluated the application of the Whole Scale™ Change methodology. The organizations examined as part of the research included two large state government departments and a major metropolitan newspaper. The research construct included both qualitative and quantitative data, with a balanced blend of data collection tools being used. The primary collection vehicles included event observations, interviews, surveys and objective performance evaluations. Over 150 people were interviewed either one on one or during one of 20 focus group sessions.

Organizational Systems: A Quantum World of Wholeness

Ackoff and Emery (1972, p.18) define a system as "a set of interrelated elements, each of which is related, directly or indirectly, to every other element, and no subset of which is unrelated to any other subset." It is our treatment of the elements that is so critical. Bertalanffy (1968, p.54) distinguishes the elements within a

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system in three different ways: according to their numbers, according to their species and according to their relations with other elements. Traditional analytical methods have typically focused on the first two distinguishing factors. Bertalanffy contends that one can establish a better understanding of these relationships by studying the identity of the containing system and the information exchange process between elements.

Ackoff (1999, p.17) expounds upon this by espousing three steps to a system's approach; (1). the identification of the containing whole, (2) an explanation of the behavior or properties of the containing whole, and (3) an explanation of the behavior or properties of the things to be explained in terms of their role or function with the containing whole. In all three steps the containing whole is central. Therefore, the traditional, fragmented approach of element analysis followed by modification as a result of this analysis neglects the containing whole. Even in cases where connections between elements and the whole are identified, an assumption is made that if an element is changed, all other elements

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remain static. We know that dynamic systems do not operate in this manner. Systems must be understood, as whole systems and therefore, we must focus our attention towards the relationships that make the parts whole.

In a World of Change, Relationships are Key

Wheatley (1999, p.10) says, "in the quantum world, relationship is the key determiner of everything. Subatomic particles come into form and are observed only as they are in relationship to something else. They do not exist as independent things." Heisenberg (1958, p.107) describes this by saying they "appear as a complicated tissue of the events, in which connections of different kinds alternate or overlap or combine and thereby determine the texture of whole."

Today's rapid change forces the realization that we live in a quantum world. Just consider the explosion of global corporations; the staggering pace of innovations; and our growing dependence on a market developing around e-commerce. Being responsive to these environmental changes requires that we continue to expand our understanding of the relationship networks through the sharing of information and the creation of identity.

Operationalizing Chaos:
Basic principles necessary for understanding the inter-connectedness of relationship, identity and information include:

Living systems identify new potential through information sharing

Living systems generate order through relationships

Living systems organize at a higher level around identity

Given these principles, the concept of Whole Scale™ Change provides a practical platform towards understanding living systems. The processes associated with Whole Scale Change, destroy the self-imposed boundaries of daily organizational life. System members are enabled to explore beyond outdated and artificial barriers that they have grown to know and fear. During such explorations, critical moments of discovery occur. Discovery triggers a different kind of organizational change. This became evident during this research process; managers were no longer able filter communications through the hierarchy. As one person stated, "the culture change process (Whole Scaleä Change) acted as a catalyst to drive us forward as a result of uncensored dialogue." Change was not limited by the pre-imposed rules and boundaries inherent to most organizations. These experiences resulted in significant paradigm shifts that changed the way system members understood/comprehended the system. As these traditional boundaries were shattered, system members were empowered to share more openly.

Living systems explore greater potential through information sharing:
As Michael Hammer and James Champy (1993) state the "era of smooth sailing is gone." Long gone are the days when we planned and designed in a vacuum. For every system we design, there is a loophole. For every rule there is an exception. For every new solution, there is a new problem. Organisms are in a constant state of evaluation and discovery. "Whenever the environment offers new and different information, the system chooses whether to accept that provocation and respond" (Wheatley, 1999 p. 21). Organizations are in perpetual motion, waiting to discover ever more

innovative ideas – discoveries that spawn creation.

Within the context of a Whole Scale™ Change event, information is allowed to flow freely across all boundaries. Judgment and evaluation of the information are initially suspended, while sharing is strongly encouraged. The explicit use for some information is unclear, yet its implicit purpose is to aid in the construction of a common database. Information takes on many forms, such as conversations, presentations, exercises, etc. These force system members to broaden their awareness level of the entire system. This awareness is often expressed as dissatisfaction initially, but it soon turns into understanding. Once this initial organizational discontent is overcome, system members begin to develop the trust necessary for building relationships.

A new way of communication rapidly evolves, people are able to speak exactly what they feel and think, and there is a degree of organizational listening that didn't exist before – listening that fuels mutual respect. For many this form of dialogue is a new experience, people are asked to speak their own truth. Individuals are able to push back and challenge one another without fear of retribution. Unrestricted information flow is fostered; individuals are supported to answer tough questions, thereby creating a new sense of accountability that did not exist before. This sense of accountability grows out of responsibility, rather than fear. The group as a whole provides the necessary tension to reduce the acting out on personal agendas, so self-regulation becomes an innate aspect of the process. Thus, information continues to flow into the organizational field and a common database evolves.

During a Whole Scale™Change event, as system members engage in a

replicated microcosm of the broader system, they begin to see things they have never seen before. Participants listen to others and begin to recognize that they are not alone. They begin to appreciate one another from different perspectives. They begin to see the consequences of their own actions on the broader system. In essence, they become much more aware of their surroundings. One individual stated, "each group had its own goals and we never really cared about how those goals aligned with the division's goals or the department's goals. It was also unclear as to which goals took priority, for nobody even asked this question. So, naturally they were only concerned with their own." Another participant said, "the conference helped us to become more focused on department performance, and helped us to understand that we were members of a larger organization."

Living systems generate order through relationships:
As a result of the uninhibited flow of information, new relationships began to materialize. System members begin to relate in a very different way through the process of dialogue. They are able to share their struggles and problems. They're also more willing to take the risk of sharing their personal visions for the system. The perceived organization as it existed, begins to disintegrate and a new, richer texture begins to evolve. Sincere and deep relationships emerge through the expression of feelings and visions. Exposing vulnerabilities and personal visions generates a new kind of willingness. System members connect on an emotional level. Relationships begin to occur on a metaphysical level. Individuals begin to see each other in a different manner.

"There is an innate striving in all forms of matter to organize into relationships. There is a great seeking for connections, a desire to organize into more complex systems that include more relationships, more variety," (Wheatley, 1996, p. 30). We must learn to recognize systems as whole systems not as individual elements. The relationships of these elements are as critical as the elements themselves. "The notion that fragments are separately existent is evidently an illusion, and this illusion cannot do other than to lead to endless conflict and confusion" (Bohm, 1980, p. 1). The challenge is that when we are so entrenched inside our own entity, it is difficult to comprehend a coherent entity. Whole Scale Change increases the level of comprehension by simulating a shared experience of inquiry across the entire system. No one individual or group has the capacity to create organizational optimization alone. However, when the components of the system are brought together, the capacity to create system-wide solutions is generated. One person said, "we began to start talking as a whole organization verses individual divisions, division barriers are breaking down and people are working together." The dialogue that took place began to generate a sense of enthusiasm that evolved from the diversity of opinions that came from the various subsystems that make up the organizational system. An authentically different attitude emerged. One participant said, "tomorrow isn't what it use to be!"

My research observations indicate that this higher degree of order and understanding evolves within a Whole Scale Change event. In fact, this evolution may be a necessary component of success. However, this order is system-generated, not imposed upon the system. The elements of the system, when provided the appropriate space, come together and generate the degree of structure and order necessary to rediscover and enhance identity. One of the most interesting findings during the focus group sessions was how some individuals had converted the outcomes of the conference into practical everyday uses, or found personal ways to develop order around the event outcomes. For example, one supervisor included the values generated at the event on his internal memos in order to reinforce their use. Another supervisor incorporated the values into the annual performance evaluations for all of his employees, while yet another supervisor began using these values as part of the employment interviewing process. None of this was dictated, it simply evolved from the identity generated during the Whole Scale™ Change process.

Living systems organize at a higher level around identity:
Through the process of being open, vulnerable and willing to share personal visions, common ground is established. This common ground acts as the foundation for self-organization. It is a shared experience that assists system members in the development of a new, unified vision. This vision is something far more than a statement on a sheet of paper. It is the embodied outcome of full participation by the collective whole. It's about the creation and validation of one common purpose or identity. Shared identity becomes inseparable from the collective individual identities, serving then as a driving force to guide the individual elements of an organization in a unified direction. The power of this newly created vision is that it evolved from the full, uninhibited, participation of individuals. One person stated during an event that " I have a personal stake in the vision that I did not have before."

We know that the most essential element of living systems is the creation of its identity. Identity is what forms and drives the system forward. Common purpose must be established so that all parts of a system are serving a united identity. Within a Whole Scale Change

session, participating members are asked to generate and articulate an organizational vision. The individuals responsible for realizing the vision are actually involved in its creation. Not only does this generate an increased degree of commitment to the vision, but it also serves in the creation of a unified identity.

As living systems struggle to maintain identity, a higher level of complexity will evolve. This higher-level system becomes better equipped to deal with the issues of today, only to find that it is already tomorrow. Thus, evolving to an even higher level. This process is called autopoiesis. "Autopoiesis is the fundamental process for creating and renewing itself, for growth and change. A living system is a network of processes, which every process contributes to all other processes. The entire network is engaged together in producing itself" (Capra 1996, p. 99). The basis for autopoiesis is the sharing of information.

On reflection we realize that this process is in direct contradiction with traditional scientific beliefs. "According to the second principle of thermodynamics, the general trend of processes is towards increasing entropy.[1] Yet, living systems maintain themselves in a state of the high order and improbability" (Bertalanffy, 1968, p. 143). Through the process of engaging the individual elements of the whole system and the sharing of information, new potentials arise, opportunities that no one element is capable of comprehending by itself. In their book *Dealing with Complexity: an Introduction to the Theory and Application of Systems Science (1996, p.9),* Robert Flood and Ewart Carson discuss the process of autopoiesis by saying, "a cell produces its own components that in turn produce it. Living systems can be thought of as autopoietic since they're organized to enable their processes to produce components that are necessary for the continuance of their

processes." As this system continues to engage with itself, its potential grows, opening up a wealth of opportunities that didn't appear to exist before.

A living system is engaged in an on-going battle of serving its own identity. It is constantly expending energy to maintain or expand itself. The activities that a living system pursues are directed towards the accomplishment of identity. These systems will initiate change for their own self-interest. There is no need to foist change upon the system; necessary change will evolve from within. It's about "letting go" so we can get going. To compete in today's era of rapid change, organizations must master this skill. Unfortunately, "Organizations lack this kind of faith, the faith that they can accomplish their purposes in varied ways and that they do best when they focus on intent and vision, letting forms emerge and disappear. We seem hypnotized by structures, and we build them strong and complex because they must, we believe, hold backed the dark forces that threaten to destroy us" (Wheatley, 1999, p. 18).

During one of the case studies undertaken in this research, a participant said, "after the conference, I was able to refer to it and then turn people loose. Having experienced it, they understood what they needed to do and how they could help others. It was as if the common purpose had come alive. It was invaluable in striving towards internal customer service." After establishing the shared identity, it acted as a force that continued to bring people together long after it was over. People understood why they were doing what they were doing. Therefore, agreement came much more rapidly since it was focused outwardly towards the organizational vision.

In one such illustration, a Hardware Analyst, within one of the state government organizations, willingly

went beyond department standards to provide another employee with the technical tools necessary to better serve the customer. This typically required multiple approvals and signoffs, yet he understood that it was an important request towards reaching the organizational vision. Therefore, he was able to look beyond his narrow perspective to a more systems-wide one. During one focus group session a person said that employees would often whisper to each other, "remember the conference" in order to gain someone's attention. Whatever the issue, the events seemed to create some invisible force that guided behavior and organizational life. Which enabled the organizations to become highly flexible and responsive to a turbulent environment.

Future State – Moment State:
Unseen connections emerge from the Whole Scale Change process, which can ultimately lead to the creation of a new organizational texture. Whole Scale™ Change enables organizations to develop the capacity to respond to disturbances and opportunities by reorganizing itself at a more complex level. This occurs through the process of sharing information and enhancing relationships. Almost everyone interviewed during the study, felt that the interactions that occurred during the events were critical to future realized success. Some said that it has brought employees together on a personal basis, creating ongoing relationships and it acted as a platform for the creation of a shared identity. Once a shared identity is generated, it acts as an invisible force used to structure space and modify behavior; therefore, guiding and influencing that which occurs within an organization. As on person said, "it took on a life of its own", referring to the Whole Scale™ Change event.

With limited ability to predict and forecast the future of a social system in a

world of chaos, there is an increased burden on system members for higher levels of responsiveness. Not only do these members need to enhance the inter-connectedness of relationship, information and identity but they also need to access these in the moment. In a Whole Scale Change event participants are shown *HOW* this works and *WHAT* operationalzing chaos looks like. The processes within Whole Scale™ Change actually demonstrate self-organization in a simulated environment. Participants are able to observe the consequences of their actions on the larger system. "The most powerful learning comes from direct experience. When our actions have consequences beyond our learning horizon, it becomes impossible to learn from direct experience. We learn best from the experience, but we never directly experience the consequences of many of our most important decisions" (Wheatley, 1999, p.23)

This phenomenon may be the most critically observed characteristic of this model. While the Whole Scale Change events did not always produce the original desired outcomes the organizations hoped for, the sessions did act as a stimulus to building critical competencies that are essential for long-term survival in a chaotic environment. Adhering to the quantum theory (that it is only through observation that things become real), then it can only be through experience that we generate a deeper understanding. The energy that is created during these events is not the result of charismatic presentations of a desired future, as much as the participation and experience of being part of this future. One person said, "the direct benefits were not the most substantial, it was the indirect benefits that made the greatest impact, such as motivating and supporting employees. The most substantial part was the experience itself and its impact

on individuals, not the action plans. The conference was an eye-opening experience."

Today's competitive environment is extremely challenging. There is a tremendous need to increase the level of participation in order to enhance commitment, – but we've learned that building commitment takes time — yet we are not afforded the luxury of taking our time in implementing new ideas. We also know that information and relationships are essential to generating system-wide change. Unfortunately, traditional change approaches are incapable of accommodating all of these dimensions. While the concept of chaos theory takes us to the next level of explaining such dynamics, it provides little guidance around practice modification, based on this research it appears that Whole Scale™ Change does.

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[1] Entropy is a state of increasing probability and decreasing order.

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