

**Understanding Large Group
Intervention Processes:
A complexity theory perspective**



Michael J. Arena, PhD.

Dr. Arena is an adjunct faculty member of Queens University’s Master in Organization Development program. He is also a Senior Vice President of Leadership Development at Bank of America where he serves as an Executive in Residence within the Center for Future Banking, a partnership with MIT’s Media Lab to drive banking innovation. Dr. Arena has over 20 years of experience in driving strategic change and organizational development.

Dr. Arena also serves on the board of the McColl Center’s Innovation Institute, an organization dedicated to integrating the arts with business innovation. His research findings on whole system change and complexity science have been published in multiple peer reviewed management journals. He holds a Doctorate in Organizational Development, with a concentration in Whole System Change from the Union Institute and University in Cincinnati.

Contact Information

Michael J. Arena, PhD.
 McColl School of Business
 Queens University
 20207 Wave Court
 Cornelius, NC 28031
mjarena@bellsouth.net

Abstract

This article evaluates large group interventions as organizational change methods that address more adequately than traditional models the complexity, unpredictability, and turbulence associated with today’s organizations. Large group interventions are presented as a means to facilitate organizational change from a complexity science perspective. The authors argue that such interventions increase an organization’s potential for amplifying ideas and generating radical change through self-organization: By equipping organizations to rely on their ability to reference and rearrange existing resources into more complex states, they create a balance between structure and information flow. The article concludes with a discussion of the implications of large group interventions for organizational change.

.....

For many organizations, successful change remains an elusive goal. Indeed, most change initiatives end in failure (Smith, 2002; Sterbel, 1996; Kotter, 1995). One reason for this failure may be the widespread use of mechanistic models of change that emphasize centralized control, routine behavior, and the prediction of specific outcomes (Morgan, 1998). These models are dependant upon a few underlying assumptions: only a few critical variables need to be evaluated, the sum of the parts is equivalent to the whole, causality is a linear relationship and decisions are efficiency centric (Olson & Eoyang, 2001). While such models are appropriate for understanding and managing change in stable environments, they

are ill-suited to turbulent environments (Holman & Devane, 1999; Burns & Stalker, 1961)—precisely the kinds of environments that have become the norm in organizations (Axelrod & Cohen, 1999, Wheatley, 1992). Recognizing this new reality, some practitioners have turned to complexity science for models of change that address distributed knowledge, creative behavior, and the prediction of unfolding patterns of events.

Over the past 40 years, complexity theory has become an increasingly important tool for explaining a range of phenomena in such sciences as physics (Grebogi, Ott, & Yorke, 1987), chemistry (Prigogine & Stengers, 1984), biology (Kauffman, 1993), and meteorology (Lorenz, 1963). More recently, it has diffused into the social sciences, where it may have even greater relevance (Boisot & Cohen, 2000). In contrast to the dominant theories of organizational change, which rely on traditional assumptions of reductionism, linear causality, and objective observation, complexity theory adopts the emerging assumptions of holism, mutual causality, and perspectival observation (Olson & Eoyang, 2001). Such assumptions allow us to think about organizational change not as episodic, routinized, and equilibrating, but rather as ongoing, creative, and disequilibrating (Brown & Eisenhardt, 1997). But while complexity theory has received growing attention as an emerging direction in organizational change (Garud & Van De Ven, 2002; Levinthal, 1997; McKelvey, 1999), the tools, methods, and processes necessary to facilitate complex organizational change in strategic direction, corporate culture, or organizational design have yet to be adequately identified.

We attempt to fill this gap by showing how large group interventions (LGIs) discussed in the organization development literature (Bryson & Anderson, 2000; Holman & Devane, 1999; Nixon, 1998; Bunker & Alban, 1997) facilitate organizational change from a complexity science perspective (Olson & Eoyang, 2001). An underlying assumption of LGIs is that the expected turbulence of today's environment can be successfully addressed when the appropriate tools and methods are utilized to prepare a group (Holman & Devane, 1999).

Traditional, top-down change models have two major drawbacks: They create resistance, and they require a great deal of time to implement (Bunker & Alban, 1997). LGIs avoid these two pitfalls. Unlike the traditional approaches, LGIs engage the whole system at a single point in time. Because they are based on collaboration, shared information, and system integration, LGI models encourage the simultaneous participation of many individuals across the organization, and thus help to reduce resistance, inspire motivation, and build strategy ownership across the entire system (Sullivan et al., 2002).

LGIs differ from traditional models of change in a number of other important ways that make them ideally suited for dealing with complexity. Sessions can include hundreds of individuals devoted to the change initiative (Bunker & Alban, 1997) and rely upon the shared experiences of participants to make critical decisions (Bryson & Anderson, 2000; Boyett & Boyett, 1999). Moreover, LGI methods are faster than traditional approaches: LGI events

usually occur over two to three days, with periodic follow-up events.

LGIs have been in existence for years (Bunker & Alban, 1997; Bryson & Anderson, 2000; Nixon, 1998), Fred Emery and Eric Trist developed the first Search Conference in 1960. It is known as the Barford Conference and was designed to assimilate two newly merged organizations into Bristol Siddeley by creating a unified strategy, mission and set of values (Bunker & Alban, 1997; Nixon, 1998). These early experiences inspired the development of both Future Search and Whole Scale Change in the 1980's (Weisbord, 1987; Jacobs, 1994; Nixon, 1998) and have been leverage in such organizations as Ford, Boeing, and IKEA (Manning & Binzagr, 2001; Weisbord & Janoff, 2005). It was the book, *Large Group Interventions* (Bunker and Alban, 1997) that propelled these methods into the mainstream of organizational development. Bunker and Alban (1997) examined 12 different LGIs, each designed to engage individuals across a whole system to identify the need for change, analyze the current situation, generate solutions, and develop an implementation or action plan. Since the publication of Bunker and Alban's book additional models and variations of LGI have been invented (Bryson & Anderson, 2000). This review focuses on only four of the original twelve models discussed by Bunker & Alban: Future Search, Search Conference, Whole Scale Change and Open Space for three primary reasons. Each of these methods has a broad range of utility spanning a wide array of applications; such as organizational planning, process improvement and organizational design (Dannemiller et al., 2000; Emery & Purser, 1996; Weisbord, 1987), each have

been in existence for at least two decades (Bunker & Alban, 1997; Nixon, 1998), and each are well documented in the literature stream (Bunker & Alban, 1997; Bryson & Anderson, 2000; Nixon, 1998).

The Search Conference is a participative planning method that enables a system to identify, plan and implement a desired future (Bunker & Alban, 1997). The Search Conference is based on a simple theory of participative democracy and includes six basic phases. They include: an environmental scan, analysis of history, current system analysis, most desirable system, action plan and implementation. The Search Conference is a shared learning experience, where all perceptions are valid and all participants are equal, regardless of their hierarchical position. Its primary objective is to find common ground to serious commitment to achieving a more desirable future for the system (Emery & Purser, 1996).

The Future Search model brings the whole system together and attempts to create new channels of information so that the various parts of the organization can draw upon the same information in the co-creation of a desired future (Weisbord, 1992). Its primary purpose is to create a desired future and the first steps necessary toward achieving such a future. Every Future Search includes the following phases: a historical review, current trends, current realities, an ideal future, a common future and taking action. A primary strength of Future Search is the method's ability to find a common ground that acts as a foundation towards creating a

desired future. It simply unifies the whole system towards a shared vision.

Whole Scale Change methodology is used in a variety of applications such as strategic planning, work design, and culture change in which the whole system engages in the change process at a specific point in time (Jacobs, 1994). The primary intent is to create “critical moments” across the entire system and develop a “one-brain, one-heart” organization (Dannemiller et al., 2000).

The Open Space model is based on the belief that human beings have the capacity to get things done and create their own future, absent predetermined agendas, structures, and responsibilities (Owen, 1997). Open Space is the most flexible and least structured of all the models evaluated in this review. Open Space principles and framework are quite simplistic. There is one rule and four principles. The only rule is the “law of two feet.” Open Space principals include “whoever comes is the right people”, “whatever happens is the only thing that could have”, “whenever it starts is the right time, when it's over it's over” (Owen, 1997). After providing a brief overview of the principles, the facilitator asks participants to identify some issues that relate to the theme. Participants spend the rest of the session discussing and managing these issues. At the conclusion of the day or session, participants report back to the whole group and then discuss next steps.

The purpose of this article is to demonstrate an understanding of the dynamics of the four LGI models described above, and how they break away

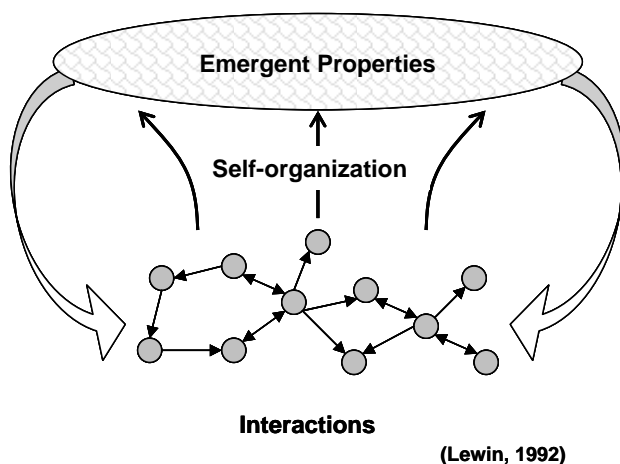
from the mechanistic perspective of organizational change by drawing upon some core concepts of complexity. As Hamel reminds us, “There can be no innovation in the creation of strategy without a change in perspective” (1996, p. 80). With the increased attention to complexity theory as a promising approach in organizational change (Levinthal, 1997; McKelvey, 1999), such a change in perspective may be emerging. To be useful, however, this change in perspective must be accompanied by appropriate tools, methods, and processes. LGIs offer one practical model for facilitating such change. We argue that LGIs can enhance an organization’s potential for emergent, radical change by moving beyond traditional models of change to embrace the complexity, unpredictability, and turbulence that characterize today’s organizations.

Emergent Self-organization as a basis for Organizational Change

The power of complexity theory to explain and predict organizational change hinges on the key concept of emergence. The term *emergent self-organization* identifies the process by which individual components of a complex system interact locally to produce spontaneous order at the global level (Stacey, 1996). Because such order is neither intended by the lower-level agents that create it (Stacey, 1996) nor imposed from above by a central authority (Axelrod & Cohen, 1999), self-organizing systems are inherently difficult to manage. Indeed, attempts to control the emergence of self-organizing systems usually prove counterproductive (Hayek, 1988). The focus of complexity theory thus shifts away from

traditional, top-down approaches to planning and managing change initiatives and toward facilitating emergence from the bottom up. Managers who wish to harness the power of complex organizations must therefore eschew direct intervention and instead pursue innovative strategies for fostering the kinds of lower-level interactions (see Figure 1) that generate emergent self-organization (Olson & Eoyang, 2001). LGIs, with their emphasis on promoting communication across organizational barriers, provide one such strategy.

Figure 1. Emergence



Proposition 1: LGIs catalyze emergent self-organization by facilitating interaction among individuals from across the system.

Findings for Proposition 1:

LGIs break down the self-imposed boundaries of daily organizational life so that previously isolated elements within the system can interact (Arena, 2003). As barriers are removed, the resulting environment promotes individuals, workgroups, and divisions to openly converse. They are encouraged to listen to one another, even when they don't agree (Weisbord, 1987). Such dynamics limit the effect of

communications being filtered through the hierarchy. Thus, LGIs act as catalysts to facilitate interaction, and therefore self-organization (Bryson & Anderson, 2000; Weber, 2005). It is important to note that the term facilitate means to make easier, not infinite. LGIs facilitate interactions, while also providing enough structure that the information generated from these interactions does not result in complete chaos or confusion. LGIs use formal exercises that both encourage and limit the number of interactions, maintaining an appropriate balance between equilibrium and absolute chaos (Kauffman, 1993).

In Future Search a “Prouds” and “Sorries” session is used to provide stakeholder feedback around the conference theme (Weisbord, 1987) as conference participants are asked to consider their present state and outline the issues that they are proud of and sorry about. As Weisbord states, “it enables people to own up and to move on” (1992, pp.41). During a Future Search conference with IKEA employees were challenged to rethink the company's product development cycle and supply chain (Weisbord & Janoff, 2005). The company had realigned itself into 11 business areas a few years ago that resulted in an unintended consequence of producing “silo” entities. The Future Search initiative was chartered to restore an open climate of innovation and risk taking. Employees were asked to share what they were proudest and sorriest about in regards to their own approach to the product pipelineⁱ. As a result, various groups owned up to their own shortcomings of internal completion (Weisbord & Janoff, 2005).

Whole Scale Change uses a different exercise, “Mads, Sads, and Glads,” (Dannemiller et al., 2000), to generate information on key themes of relevance. For example, a major newspaper company leverage Whole Scale Change to create an organizational strategy in response to a shifting business climate, had participants brainstorm the “Mads, Sads, and Glads” around such categories as teamwork, communication, decision making, customer service, rewards / recognition, technology resources, work environment and training (Arena, 2004).

Open Space encourages individuals to participate in small group conversations devoted to topics that are selected during the initiating phase of the event by participants. Each of these exercises encourages the interactions necessary to explore new possibilities across the system. Such explorations often spark critical moments of discovery and heightened awareness (Sullivan et al., 2002). This discovery has the potential to trigger a different kind of organizational change: an emergent change, a change that is unpredictable yet enhances the organization's ability to grow. As a result of the Future Search Conference at IKEA, interesting product innovations emerged. For example, the idea of selling three sets of slipcovers with each sofa so that customers could change them seasonally (Weisbord & Janoff, 2005), while such an innovation couldn't have been predicted, they also wouldn't have occurred absent the interactions generated during the conference.

Qualities of Self-organization within Large Group Interventions

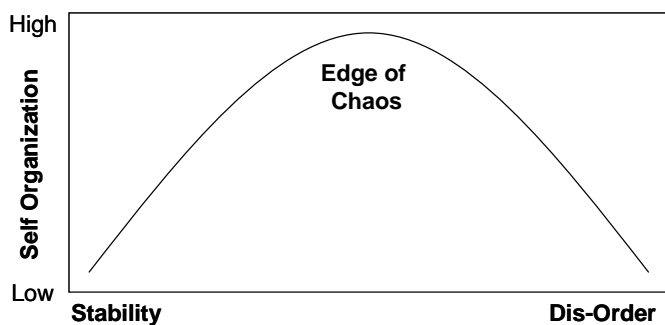
A system draws on three primary processes during self-organization (Lichtenstein, 2000). The first is self referencing, in which the system draws upon its own intrinsic elements for survival or growth. Referencing system history and experiences emphasizes principles, values, core competencies, existing capabilities and other accumulated learning. Systems leverage historical events and capitalize on both failures and successes (Chiles & Meyer, 2001). Rather than seeking solutions externally, the system turns inward and invents its own models of understanding. Since the system's history is irreversible, self-referenced changes enhance the likelihood of success, for the system is equipped to draw on existing resources, while changes imposed without reference to learned experiences create a much greater burden on the system. Dynamic systems initiate change for their own self-interest. There is no need to foist change upon the system; the necessary change will evolve from within the system as it struggles to maintain its identity (Wheatley, 1992).

Another crucial process for self-organization is the increased capacity for generating something new from that which already exists (Lichtenstein, 2000). The rearrangement of existing resources and assets that results during intensified interactions generates emergent properties. This occurs as system members find new ways to use both tangible and intangible assets and capitalize on local characteristics to create new synergies (Chiles & Meyer, 2001). Such rearrangements enhance the system's ability to follow through on

its purpose since the required assets are already available.

The third process, interdependent organizing, is the delicate balance between structure and informal organization (Lichtenstein, 2000; Kauffman, 1995). Self-organization is optimized at high levels of interdependence, with high levels of connectedness to allow for the proliferation of new innovations. This results when systems encourage the open exchange of information exchange while maintaining clear boundaries that limit the degree of instability. Systems are most likely to self-organize when operating in a narrow space between stability and disorder (see figure 2). Within this space, individuals within the system produce the highest level of interactions and exchange the most useful information (Kauffman, 1995; Axelrod & Cohen, 1999). This space is the edge of chaos.

Figure 2. Balance of organizational structure



Proposition 2a: The process of self-organization that evolves during LGI relies on the system's ability to self-reference the organization's principles, competencies and history.

Proposition 2b: The emergent properties generated during LGI increase the capacity of the organization through the rearrangement of existing resources and assets.

Proposition 2c: The high levels of interdependence within LGI optimize self-organization by creating a balance between structure and information flow

Findings for Proposition 2a:

LGIs facilitate the sharing of personal visions, values and principles, which establishes a common ground and acts as the foundation for self-organization (Weisbord, 1987). The common ground is inseparable from the collective organizational history and accumulated learnings. LGIs assume that individuals can learn from experience and adapt to the future. During a Search Conference, the whole system explores its combined history in the “where did we come from” session. Critical experiences and accumulated learnings are described through stories and documented on a wall chart for future referencing (Bunker & Alban, 1997; Emery & Purser, 1996). Future Search focuses on the organization's history by documenting critical experiences across the whole system from the past few decades. These experiences include “Global” issues, “Organizational” issues and “Personal” issues (Bunker & Alban, 1997; Weisbord, 1987). IKEA was able to rediscover what had made them successful by examining three levels of self referencing; recognition of the connections among individuals, recognition of its global presence and

the recognition of the company's deep rooted history. This enables them to leverage their core competencies of innovation and risk taking to become competitive in a globally complex environment (2005, Weisbord, Janoff).

LGIs explore the past as a basis for creating the future by leveraging historical routines, structures and value systems. The order that emerges from the common ground is system-generated, not imposed upon the system, enhancing the likelihood of self-organization. LGIs are designed to provide the appropriate space for individuals to come together and generate the interactions necessary for the organization to reference itself.

Findings for Proposition 2b:

During LGI, the organization begins to talk as a whole rather than as individual divisions, departments and teams. By bringing the fragmented components of the system together, LGIs enable them interact to create system-wide solutions (Sullivan et al., 2002). As individuals interact, they recognize new opportunities for using existing resources, creating synergies that previously did not exist. The Open Space model uses the "morning news" and "evening news" sessions to seek out rearrangement opportunities by sharing the ideas generated during each session with the whole group. The Search Conference and Future Search models engage the whole group into an action planning phase that is dedicated to seeking system-wide solutions to critical discoveries. LGIs allow an organization to develop the capacity to respond to disturbances and opportunities by reorganizing itself

into a more complex state. In response to serious internal customer satisfaction issues (1999, Johnson, Tolchinsky), a department within the CIA launched a change initiative using the Whole Scale Change methodology. Small teams of customers, service providers and department employees were chartered to address specific issues in the areas of process improvements, customer service and implementation barriers. This initiative resulted in a completely new organizational design, through the rearrangement of existing resources that generated significant customer satisfaction improvements (Johnson & Tolchinsky, 1999). During LGIs, synergies are leveraged across the organization, frequently resulting in the rearrangement of existing resources and assets.

Findings for proposition 2c:

LGIs at least temporarily break down the barriers within organizations that often misdirect information flow and resource utilization. However, LGIs are not void of structure; they simply shift the purpose of structure away from controlling information toward sharing it. For example, Whole Scale Change adopts a structured approach to sharing information by asking specific questions and providing a "report out" template during small group conversations (Dannemiller et al., 2000). Such an approach encourages participants to openly respond to critical questions. A certain amount of structure is healthy during an LGI; the danger lies in creating too little or too much (Bunker & Alban, 1997). The two extremes produce anxiety; by either constraining the organization in equilibrium or propelling it

into complete chaos. Emery outlines two alternative designs: Design Principle 1 (DP1), the traditional hierarchy approach, and Design Principle 2, which shifts coordination and control to those closest to the work. The latter is the basis for the Search Conference and falls somewhere between DP1 and laissez-faire (Emery & Purser, 1996). The structure provided in Open Space is much more implicit. During the kickoff session, individuals are asked to sit in a large circle. In a simplistic way, the circle stimulates information sharing by conveying the idea that participants all enter as equals, but they are also all part of the whole (Owens, 1997).

Shared information generates meaning and significance; it is the “life blood of the organization” (Dannemiller et al., 2000, p. 28). While interactions may drive self-organization, information mediates such interactions (Axelrod & Cohen, 1999). Information flow allows direction, processes, systems, and resources to emerge as insights that guide the interactions within LGI (Dannemiller et al., 2000). Interactions across different levels, teams, divisions, functions, and businesses create an interdependent network. Critical information within an LGI takes many forms: market research data, customer surveys, project updates, leadership presentations, news rooms, etc. Whole Scale Change uses the “Valentine” exercise to solicit feedback from key internal stakeholders. Each group meets with their normal work group and provides written feedback to other groups by first stating “what they appreciate” and then “what they need from them”. The group receiving the feedback is then asked to respond publicly by making change commitments (Jacobs, 1994).

These processes encourage interdependency. Ferranti-Packard Transformer, Ltd., Ontario, Canada plant was experiencing significant problems with quality and delivery (Dannemiller, James & Tolchinsky, 1999). Worse yet, management’s relationship with the three locals of United Steel Workers created a very bleak outlook. However, a 280 person event brought together employees, suppliers and customers to create one “Ferranti-Packard team” that generated a shared vision and action plan. One year later, the facility had drastically improved quality, delivery and employee relations (Dannemiller, James & Tolchinsky, 1999).

The structured experiences within LGIs encourage critical exchanges that clarify the interdependency between groups, these interactions can then act as a catalyst to drives self-organization. As one individual stated (Arena, 2004), “the conference helped us to become more focused on organizational performance, and helped us to understand that we were members of a larger organization.”

Radical Change across the Whole System at the Edge of Chaos

A dynamic system provides continuous feedback to itself. As each new idea emerges and is subjected to this feedback process, it is either dampened or amplified. When change is imposed on a system, barriers and obstacles are constructed that increase the likelihood of dampening and therefore limit interactions. When change emerges from within a system, however, feedback can

reinforce and amplify even simple ideas, often resulting in dramatic consequences. Such effects, however, are highly unpredictable: while one change may amplify across the system, the very next may be of no consequence at all. Organizations with strong interaction have a greater likelihood of generating large-scale, radical change (Whittington et al., 1999). These interactions often lead to new learning and insights which are proliferated across the system (Olson & Eoyang, 2001). Within a non-linear system, intensified interactions exhibit increasingly complex dynamics, which have the potential to emerge into dramatic results (Axelrod & Cohen, 1999). Yet, when these interactions are too intense they result in confusion. The dynamism that characterizes organizations ranges between equilibrium and chaos (Dent, 2003). It is that narrow but highly productive territory between order and chaos where a system enjoys stability without rigidity, flexibility without confusion (Kauffman, 1993). The optimal region known in complexity theory as the “edge of chaos” (Brown & Eisenhardt, 1998).

When a system is operating within the comfort zone of equilibrium, new ideas are often dampened, making radical change highly unlikely. Within this threshold, major transformations are resisted (Lichtenstein, 2000). However, on the “edge of chaos”, beyond the boundaries of equilibrium, even small shifts can make a big difference. Tension and stress often act as a means to move the system beyond the threshold. As tension increases, the system begins to experience significant changes in activities or resource utilization and is pushed beyond its current limits (Lichtenstein, 2000). When

the system extends beyond this threshold, it becomes highly nonlinear, and a new order begins to emerge (see figure 3). During this period, useful ideas are more likely to be amplified than dampened, increasing the opportunity for radical change.

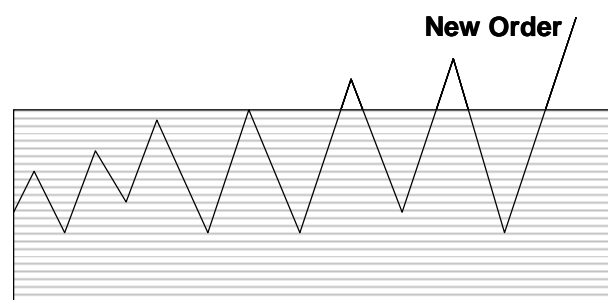


Figure 3. State of amplification

(Lichtenstein, 2000)

Proposition 3: The dynamics generated through LGI enhance the likelihood of radical change by amplifying ideas and increasing tension.

Findings for Proposition 3:

Boundaries, functions, divisions and rank become less constraining during LGIs, creating a less inhibited flow of information and minimizing the dampening effect on ideas. LGIs generate an environment of openness, shared fields and trust (Emery & Purser, 1996), by breaking down the boundaries that limit interactions across departments, divisions and groups. For example, the “max mix model”ⁱⁱ within the Whole Scale Change process encourages interaction (Dannemiller et al., 2000) by systematically partnering individuals within teams that include multiple levels and functional responsibilities.

Within Open Space, ideas are either amplified or dampened on the basis of individual interest. The simple rule, “the law of two feet” enables each participant to provide feedback on the basis of his or her own interest level (Owens, 1997): If participants view an idea as having merit, they amplify it by engaging in the conversation. Conversely, if they view the idea as having limited merit, they move on to the next idea, creating a dampening effect.

The Search Conference uses simple brainstorming techniques across whole systems to generate ideas that create a “Shared Field” (Emery & Purser, 1996). Some of these ideas are selected by participants as being important to the future of the system and are therefore amplified across the system and given greater consideration. A product unit within Microsoft deployed a Search Conference to generate an understanding of the external forces affecting the economy, their industry and their business group (Emery & Devane, 1999). The event acted as the catalyst toward the creation of a “Shared Field” or a set of ideas that had been amplified and agreed upon to drive actions.

Within traditional change models, change tends to evolve incrementally through predetermined stages in a linear fashion. Radical change however, emerges as a nonlinear shift when a critical boundary is crossed (Lichtenstein, 2000). LGIs act as disequilibrium-generating devices, forcing the system toward the edge of chaos (Pascale et al., 2000). While such changes are unpredictable, periodically a whole new order emerges. LGI experiences often produce significant paradigm

shifts (Sullivan et al., 2002) that can result in very short time frames. For example a design team from AT&T spent 10 months developing a design for the AT&T Olympic Pavilion only to have their plan scrapped. As a result they had a limited time to create a new design, leveraging the Open Space methodology; the team went from a blank sheet of paper to architectural drawings in just two days (Owen, 2000).

LGIs generate the tension necessary to force the organization beyond its typical threshold in a number of ways, perhaps most fundamentally by inviting the whole system into the room. Because legitimate and longstanding conflicts divide many of these groups, encouraging them to work together increases tension. The accelerated timelines associated with LGIs adds to this tension by requiring a rapid response that unnerves many participants. Some of the models address tension more directly; for example, Whole Scale Change explores the level of dissatisfaction with the current state as part of the change formula $D \times V \times F > R$ (Bunker & Alban, 1997; Bryson & Anderson, 2000; Dannemiller et al., 2000). The D provides the basis for why things cannot remain as they are; it provides the “case for change”. By communicating the level of dissatisfaction with the status quo across the system a “wake up call” for change is issued. This message provides the tension necessary to propel the organization beyond its typical threshold. A major city newspaper leveraged falling circulations and the increasing role of technology as critical concerns to the company long-term viability to inspire change across the system (Arena, 2004). The combined force of idea amplification and increased tension within LGIs increases the

likelihood to engender ideas more radical than those that grow out of traditional change processes.

Boeing Corporation used LGIs in groups composed of up to 2000 employees to design a new 777 in just 5 years, versus the industry average of 12 (Manning & Binzagr, 2001).

Discussion

Examining LGI through the lens of self-organization offers an innovative perspective for organizational change. Traditional change models that cling to the ideals of objectivity and predictability do not embrace the complexity, unpredictability, and dynamism necessary to successfully manage change in today's environment. LGIs provide a practical alternative. Rather than directing and controlling key variables, LGIs offer specific tools to facilitate the natural dynamics of change. The propositions outlined in this article, along with their subsequent findings, illustrate how LGI can be used to facilitate an organization's move toward the edge of chaos in order to enhance the likelihood of self-organization. LGIs provide the platform for a shared experience that can guide behaviors based on some simple rules. These emergent aspects position LGIs to be more robust than traditional change models by providing practical approaches to managing change on the edge of chaos. More specifically, Whole Scale Change, Future Search, Search Conferences, and Open Space provide practical approaches to facilitate the self-organization of emergent properties, through the processes of self-referencing, rearrangement, and interdependence, and the emergence of radical change (see table 1).

A number of important caveats about the deployment of LGI must be mentioned here.

While these models have the potential to produce radical change, they may also produce little change at all. Such a dynamic only reinforces the connection between LGIs and complexity science, yet it also confronts leadership with a paradox. Most organizational structures and systems are hardwired to provide the comfort of certainty. Leaders rarely take chances; they bet only on ideas that have a high degree of certainty. The paradox is that the very structure a leader is seeking to change may be the same structure that prohibits a leap of faith toward new solutions. Therefore, a leap of leadership faith may very well be a precondition for the success of LGIs.

Shifting the role of leadership is also a necessary step in the move toward complexity. To deploy LGI, organizational leadership must disperse a number of traditional responsibilities across the system, including external analysis, strategy development, organizational planning, and decision making. The role of leadership shifts toward sponsoring these bottom-up changes by providing the necessary resources and support—specifically, by creating an environment that strives toward cooperation, open-mindedness, urgency, variety, and information sharing. These dynamics must be placed back into the day-to-day organization. Many LGI participants will consider the experience an aberration if continual dedication toward self-referencing, resource rearrangement, and interdependence are not emphasized. Therefore, the burden is on leadership to continue to seek innovative

Table 1.
Some practical concepts of Large Group Interventions

Core propositions	Search Conference	Future Search	Whole Scale Change	Open Space
1. Emergent Properties	<i>“our turbulent environment”</i>	<i>“prouds & sorries”</i>	<i>“mads, sad, & glads”</i>	<i>“market place”</i>
2a. Self-reference	<i>“our system’s history”</i> <i>“common ground”</i>	<i>“focus on our history”</i> <i>“common ground”</i>	<i>“valentines”</i>	<i>“small group conversations”</i>
2b. Rearrangement	<i>“action planning”</i>	<i>“take action”</i>	<i>“system-wide action planning”</i>	<i>“morning news”</i> <i>“evening news”</i>
2c. Interdependence	<i>“event agenda”</i> <i>“design principle 2”</i> <i>“documentation”</i>	<i>“event agenda”</i> <i>“documentation”</i>	<i>“event agenda”</i> <i>“one brain / one heart”</i> <i>“table report outs”</i>	<i>“bulletin board”</i> <i>“dynamics of circle”</i> <i>“news room”</i> <i>“four principles”</i>
3. Radical Change	<i>“our current system”</i> <i>“shared fields”</i> <i>“most desirable system”</i>	<i>“focus on the present”</i> <i>“discover common futures”</i>	<i>“D x V x F > R”</i> <i>“preferred futuring”</i> <i>“max / mix model”</i> <i>“critical moments”</i>	<i>“small group conversations”</i> <i>“law of two feet”</i>

approaches by building tension into the system so that system does not become re-entrenched in equilibrium.

Translating these dynamics back into the day-to-day organization requires a shift in individual mindsets as well. Competencies of responsiveness, cooperation and adaptability need to replace those of predictability and objectivity. Managers must learn to leverage information as a competitive whole system asset rather than a mechanism for creating individual power. Organizational

structures must encourage cross-functional opportunities, and permeable boundaries must permit the flow of information. Some would argue that many of these dynamics are already in place, yet current organizational structures inhibit the creativity and flexibility necessary for survival and growth of the system (Stacey et al., 2000).

There are a number of limitations to the propositions outlined within this evaluation. The first and perhaps most important is that we review only four LGIs. Bunker and Alban (1997) outline

12 different models in their book *Large Group Interventions*, and there are many other versions beyond the four outlined in this article. The most commonly mentioned in the literature stream (Bunker & Alban, 1997; Bryson & Anderson, 2000; Nixon, 1998) among those omitted are Appreciative Inquiry Summits, Conference Model, and Workouts. Another limitation of this review is that the propositions stated within this article are limited to dynamics during the events; they do not assert that the dynamics that occur during LGI will be directly transferred into the ongoing operation of an organization. Such assertions would require a more in-depth post-LGI analysis.

The implications of this evaluation are powerful. As the pace of change continues to accelerate, organizations continue to apply outdated approaches. While complexity science offers a compelling model of how organizations operate, this is only the first step. Practical solutions must follow. LGIs offer organizations such a solution by providing practical approaches to facilitate the self-organization, through the processes of self-referencing, rearrangement, and interdependence, and generating radical change.

References

- Arena, M. (2002). Changing the way we change. *Organizational Development Journal*, 20(2), 33-47.
- Arena, M. (2003). Exploring the new sciences through Whole Scale Change. *Organizational Development Journal*, 21(1), 81-86.
- Arena, M. (2004). Enhancing organizational awareness: An analysis of Whole Scale Change. *Organizational Development Journal*, 22(1), 9-20.
- Axelrod, R. & Cohen, M. (1999). *Harnessing complexity: Organizational implications of a scientific frontier*. New York: The Free Press.
- Axelrod, R. (2000). *Terms of engagement: Changing the way we change organizations*. San Francisco: Berrett-Koehler Publishing Inc.
- Bailey, D. & Dupre, S. (1992). The future search conference as a vehicle for educational change. *Journal of Applied Behavior Science*, 28(4), 510-520.
- Boisot, M. & Cohen, J. (2000). Shall I compare thee to ... an Organization?. *Emergence*, 2(4), 113-135.
- Boyett, J. & Boyett, J. (1999). *The guru guide: The best ideas of the top management thinkers*. New York: John Wiley.
- Brown, S. & Eisenhardt, K. (1998). *Competing on the edge: Strategy as structured chaos*. Boston: Harvard Business School Press.
- Bryson, J. & Anderson, S. (2000). Applying large-group interaction methods in the planning and implementation of major change efforts. *Public Administration Review*, 60(2), 143-163.

- Bunker, B. & Alban, B. (1992). What makes large group interventions effective. *Journal of Applied Behavioral Science*, 28(4), 579-592.
- Bunker, B. & Alban, B. (1997). *Large group interventions: Engaging the whole system for rapid change*. San Francisco: Jossey-Bass Publishers.
- Burns, T. & Stalker, G. (1961). *The management of innovation*. London: Tavistock.
- Capra, F. (1996). *The web of life: A new scientific understanding of living systems*. New York: Anchor.
- Casti, J. (1997). *Would be worlds*. New York: John Wiley.
- Chiles, T. & Meyer, A. (2001). Managing the emergence of clusters: An increasing returns approach to strategic change. *Emergence*, 3(3), 58-89.
- Coleman, H. (1999). What enables self-organizing behavior in businesses. *Emergence*, 1(1), 33-48.
- Dannemiller, K., James, S. & Tolchinsky, P. (1999). Whole-scale change. In P. Holman & T. Devane (Eds.), *The change handbook: Group methods for sharing the future*. (1-7). San Francisco: Berrett-Koehler.
- Dannemiller, K., Tolchinsky, P., Loup, R., James, S., Belanger, J., & Blixt, A., et al. (2000). *Whole scale change: Unleashing the magic in organizations*. San Francisco: Berrett-Koehler Publisher Inc.
- Dent, E. (2003). The complexity science organizational development practitioner. *Organizational Development Journal*. 21(2), 82-86.
- Emery, M. & Devane, T. (1999). Search Conference. In P. Holman & T. Devane (Eds.), *The change handbook: Group methods for sharing the future*. (25-42). San Francisco: Berrett-Koehler.
- Emery, M. & Purser, R. (1996). *The search conference: Theory and practice*. San Francisco: Jossey-Bass.
- Fitzgerald, L. (2002). Chaos: The lens that transcends. *Journal of Organizational Change Management*, 15(4), 339-358.
- Fuller, T. & Moran, P. (2000). Moving beyond metaphor. *Emergence*, 2(1), 50-71.
- Garud, R. & Van De Ven, A. (2002). Strategic organizational change processes. In H. Pettigrew, H. Thomas & R. Whittington (Eds.), *Handbook of strategy and management* (pp. 206-231). London: Sage Publications.
- Gleick, J. (1987). *Chaos: The making of a new science*. London: Heinemann.
- Grebogi, C., Ott, E. & Yorke, J. (1987). Unstable periodic orbits and the dimension of chaotic attractors. *Physical Review*. 36, (3522-3524).
- Hamel, G. (1996). Strategy as revolution. *Harvard Business Review*, July-August: 69-82.
- Hayek, F. A. (1988). *The fatal conceit: The errors of socialism*. London: Routledge.
- Holman, P. & Devane, T. (1999). Introduction: The changing nature of Change. In P. Holman & T. Devane (Eds.), *The change handbook: Group methods for sharing the future*. (1-7). San Francisco: Berrett-Koehler.
- Jacobs, R. (1994). *Real time strategic change*. San Francisco: Jossey-Bass.
- Johnson, M., Tolchinsky, P. (1999). A redesign in the Central Intelligence Agency. *The Journal for Quality and Productivity*. March-April: 31-35.

- Kauffman, S. (1995). *At home in the universe: The search for the laws of self-organization and complexity*. New York: Oxford University Press.
- Kotter, J. (1995). Leading Change: why transformation efforts fail. *Harvard Business Review*, March-April, p.59.
- Levinthal, D. (1997). Adaptation on rugged landscapes. *Management Science*, 43, 934-950.
- Lewin, R. (1992). *Complexity: Life at the edge of chaos*. London: J.D.Dent.
- Lichtenstein, B. (2000). Self-organized transitions: A pattern amid the chaos of transformative change. *Academy of Management Executive*, 14(4), 128-141.
- Lissack, M. (1999) *Complexity: The science, its vocabulary, and its relation to organizations*. *Emergence*, 1(1), 110-126.
- Lorenz, E. (1963). Deterministic nonperiodic flow. *Journal of the Atmospheric Sciences*, 20(2), 130-141.
- Nixon, B. (1998). Creating the futures we desire – getting the whole system into the room. *Industrial and Commercial Training*, 30(1), 4-11.
- Manning, M., Binzagr, G. F. (2001). Methods, values, and assumptions underlying large group interventions intended to change whole systems. *The International Journal of Organizational Analysis*, 4(3), 268-284.
- McKelvey, B. (1999). Complexity theory in organization science: Seizing the promise or becoming a Fad? *Emergence*, 1(1), 5-32.
- Morgan, G. (1998). *Images of organizations*. Thousand Oaks: Sage Publications.
- Olson, E. & Eoyang, G. (2001). *Facilitating organizational change: lessons from complexity science*. San Francisco: Jossey-Bass.
- Owen, H. (1993). *Open space technology*. Potomac, MD: Abbott Press.
- Owen, H. (1997). *Expanding our now: The story of open space technology*. San Francisco: Berrett-Koehler Publisher Inc.
- Owen, H. (2000). *Mission: Control? Association for Quality & Participation*. January – February, 26-29.
- Pascale, R., Millemann, M. & Gioja L., (2000) *Surfing the edge of chaos: The laws of nature and the new laws of business*. New York: Crown Business.
- Prigogine, I. & Stengers, I., (1984) *Order out of chaos: Man's new dialogue with nature*. Toronto: Bantam Books.
- Smith, M., (2002). Success rates for different types of organizational change. *Performance Improvement Journal*, 41(1), 26-33.
- Stacey, R. (1996). *Complexity and creativity in organizations*. San Francisco: Berrett-Koehler.
- Stacey, R., Griffin, D. & Shaw, P. (2000). *Complexity and management: Fad or radical challenge to systems thinking?*. New York: Routledge.
- Strebel, P., (1996). Why do employees resist change. *Harvard Business Review*, May – June, p 86.
- Sullivan, R., Fairburn L. & Rothwell, W. (2002). The whole transformation conference: Fast change for the 21st century. In S. Herman (Eds.), *Rewiring organizations for the Networked Economy: Organizing, managing, and learning in the Information Age* (115-139). San Francisco: Jossey-Bass.

Weber, S. M. (2005). The dangers of success: diffusion and transition of large group interventions in German-speaking countries. *The Journal of Applied Behavioral Science*, 41(1), 111-121.

Weisbord, M. (1987). *Productive workplaces: Organizing and managing for dignity, meaning and community*. San Francisco, CA: Jossey-Bass Publisher.

Weisbord, M. (1992). *Discovering common ground*. San Francisco, CA: Jossey-Bass Publisher.

Weisbord, M. & Janoff, S. (1995) *Future search*. San Francisco: Berrett-Koehler.

Weisbord, M. & Janoff, S. (2005) *Faster, Shorter, Cheaper may be Simple; It's never easy*. *The Journal of Applied Behavioral Science*, 41(1), 70-82.

Wheatley, M. (1992). *Leadership and the New Science*. San Francisco: Berrett-Koehler.

Wheatley, M. & Kellner-Rogers, M. (1996). *A Simpler Way*. San Francisco: Berrett-Koehler.

Whittington, R., Pettigrew, A., Peck, S., Fenton, E. & Conyon, M. (1999). Change and complementarities in the new competitive landscape: A European panel study, 1992-1996. *Organization Science*, 10(5), 583-600.

ⁱ The pipeline includes the flow of products from product design to customer distribution.

ⁱⁱ The max / mix model is design to represent the organization as a microcosm with the work group of a Whole Scale Change conference. Its ideal design includes individuals from various functions, levels and facilities.

ⁱⁱⁱ The formula $D \times V \times F > R$ acts as an organizing vehicle for the change initiative with D representing the current level of dissatisfaction, V representing the future vision, F representing the first step towards moving forward and R representing the active level of resistance.