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Leading Change in Complex Systems: A Paradigm Shift

Cheryl LeMaster
Antioch University - PhD Program in Leadership and Change

LEADING CHANGE IN COMPLEX SYSTEMS: A PARADIGM SHIFT

CHERYL LEMASTER

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Cheryl LeMaster

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Approved by:

Alan, Guskin, Ph.D., Chair date

Elizabeth Holloway, Ph.D., Faculty Committee Member date

Merryn Rutledge, Ed.D., Committee Member date

Peter Martin Dickens, Ph.D., Committee Member date

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"We shall not cease from exploration
And the end of all our exploring
Will be to arrive where we started
And know the place for the first time"
T.S. Eliot

The ancient Greek word for philosophy (*philosophia*) literally means "love of wisdom," and it is defined as "the study of general and fundamental problems, such as those connected with reality, existence, knowledge, values, reason, mind and language." As I reflect on my doctoral journey, I am grateful and humbled for having had the support of so many special people on my own quest for the "love of wisdom."

As an Antioch University doctoral graduate and former Peace Corps Volunteer, I am truly honored to know Dr. Alan Guskin. Al and his illustrious background are what first drew me to Antioch's unique program in Leadership and Change. Al's catalytic part in creating the Peace Corps was pivotal in founding an organization that has truly changed the world, and influenced more than 200,000 returned volunteers, including me and countless others fortunate enough to have interacted with and benefited from this revered organization. Without the profound experience that Peace Corps provided, I would not, today, be celebrating this doctoral milestone and lifelong dream. In addition to Al's role in founding the organization that has had an enormous impact on my life, I have since come to know, respect, and truly love him. He has been a golden thread throughout my doctoral journey, and I consider myself extraordinarily fortunate to have experienced his gentle leadership, his thoughtful wisdom, and always-ready ear. I am truly honored to have called Al my advisor, my committee chair, and now a special friend.

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It is with a heavy heart that I pay special tribute to Antioch alumnus and complexity theory expert Dr. Peter Dickens. Peter was my complexity mentor and his influence on me is continuous, beginning from the moment I read his brilliant dissertation, and later when he served as my mentor for the Individual Learning Achievement, and, finally, through his contributions as a committee member. Peter inspired me early on by telling me "there are gaps in complexity theory research so big you could drive a truck through them!" Tragically, Peter lost his long battle with cancer in October of 2016. Peter is profoundly missed by me and by so many others. I will always be grateful for his keen sense of humor, his enthusiasm for all things related to

complexity science, and for his wonderful friendship. Peter's signature on the title page of this dissertation is missing, but his memory remains everlasting.

Finally, I have other special people in my life to whom I am extremely grateful: Jennifer Jacubowski (and her partner Jacqueline) is an exceptionally thoughtful and supportive close friend whose care packages quietly dropped at my front door at critical stages in the writing process were, to say the least, enormously appreciated. I am very fortunate to have met Dr. Michael Valentine as a fellow member of Antioch University's Cohort 12. As a colleague and a New Jersey neighbor, Mike quickly became a close friend, a genuine research buddy, and now my trusted business partner. I consider my partnership with Mike to be one of the true gifts of the Antioch program. Lastly, this dream could never have been realized without the love and support of my dear husband, Dr. Barton Thurber. When I first told him that I wanted to quit my job, become an independent consultant, and begin a doctoral program, he did not blink; no matter the sacrifices we've had to make along the way, Bart never waivered in his unconditional support of me and my dream. To my husband I am forever grateful for his loving support, his continuous encouragement, and his belief in me; I will endeavor always to make him proud.

Abstract

This qualitative study is an in-depth exploration of the experiences of 20 executive-level leaders from American corporations, government agencies, hospitals, and universities. At the heart of this investigation are stories that reveal the challenge of leading change in complex systems from the leader perspective, creating an opportunity to explore sense-making and sense-giving as guided by individual values and organizational contexts. Complexity Science, the framework for this research, is the study of relationships within and among systems. The aim of approaching this research from a complexity perspective is to gain a more realistic view of the issues and challenges that leaders face during change, and how they make meaning and respond in today's richly interconnected and largely unpredictable information age. Results highlight the critical role an individual's beliefs and values—as shaped by experience and guided by context—have on leadership and the organization's approach to change implementation. This study identifies three leadership conceptual categories: (1) traditional (linear and hierarchical in nature); (2) complexity (non-linear, suited to densely interconnected and rapid-paced environments), and (3) complexity-plus (including change goals beyond the organization and its members). Though traditional and complexity styles are largely known in the literature, the complexity-plus style is a newly identified category. Drawing from Uhl-Bien, Marion, and McKelvey's (2007) Complexity Leadership Theory (CLT) model, which delineates three leadership functions: (1) administrative (results orientation); (2) adaptive (learning orientation); and (3) enabling (support orientation), the key conclusions of this investigation are integrated with the CLT model to create the *Leadership Values Framework*. The results of this research contribute to our understanding of the influence of a leader's values, enhancing our ability as academics and practitioners to better appreciate, support, and develop change leadership in a new paradigm. The

electronic version of this dissertation is at AURA: Antioch University Repository and Archive, http://aura.antioch.edu/ and OhioLINK ETD Center, https://etd.ohiolink.edu

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Introduction

A New Age

Unlike any previous period in history, we inhabit a deeply interconnected and rapid-paced global environment. A world filled with astounding beauty, infinite possibilities, and terrifying realities: events happen around us that many find difficult to comprehend; they are immensely complex, frequently shocking, and essentially unpredictable. To appreciate these phenomena, we need look no further than our tumultuous political climate, the spread of fanatical violence, or the remarkable technological advances of our time. It is an age of hyper-connectivity fueled by a deeply web-based structure that is our new global reality. In response, scholars and practitioners have reflected a growing need for leaders, their organizations, and the societies they serve to recognize their domains as interconnected among diverse peoples and a changing world.

The industrial era has passed. For organizations to survive and thrive in a radically altered landscape necessitates the skill to adapt: it demands innovative thinking and new mental models; it requires the capacity to shed the old and embrace the new; it makes essential the ability to value, harness, and channel the conflict and tension that fear, ambiguity, and difference can generate. We must embrace opposition and criticism with truly open minds, listen closely to our perceived adversaries, put self-interest aside, and work together to achieve "the greater good" for our organizations, our people, and our social systems. Above all, to achieve a transition from yester-years' mechanistic age to the modern-day knowledge era—what can be called a paradigm shift—we must look anew at our approaches to leadership and change.

The Hero Leader

The photograph is one we have seen many times. It's a confident pose, the leader (a man) looking into the distance with a gaze that assures the viewer he intuitively understands what is coming next and knows precisely the action to take. In this case, the hero gazes at us from beneath an eight-ton sculpture, as if to convey that he is fearless and ready to assume any risk to protect his organization. The story line is based on a common theme. He is one individual, the hero, solely responsible for the "awakening" of this "sleepy little university art museum." The narrative extols an impressive list of accomplishments. Members of this elite institution are quick to voice their exuberant appreciation to the reader, sharing their respect and admiration for the museum, or rather, the man. The leader's name appears 21 times in the 1,300-word article. There is scant acknowledgement of anyone but the lone man; on the two occasions another is mentioned it is in relation to the master's brilliance. Not only does the leader expect this kind of adoration, he revels in it. In truth, the organization has 90 full-time employees. The number jumps to approximately 150 staff members if you consider, contractors, visiting curators, and volunteers. Yet, reading this story—and so many like it—only one person in this organization exists, unless, of course, common sense prevails.

The leader in this story carefully maintains "control" of "his" staff. He is terribly proud of this fact, considering it the hallmark of good leadership. Only he has the experience, perspective, and intellectual capacity to make the right decisions and shape the institution's future. Information is power and he portions it on a cautious, need-to-know basis. Purposeful eruptions of frustration are often visible to staff, and his rebuke swift and punishing. None dare dispute him. Praise from this leader is rare. When it happens his approval is genuine, at best; at

worst it is a strategic and divisive maneuver. Constant is the leader's fervent expectation for high performance, adoration, and loyalty.

This particular photograph depicts the director of an art museum at a prestigious Ivy League university. Generally speaking (for there are exceptions), the common, hero-themed narrative is no surprise; it reflects an artifact of a bygone era, yet it represents the kind of leadership many in the American culture (and around the world) continue to expect, demand, and believe necessary. This leader can be found in any organization, in any sector, and in any industry in the United States—and beyond. Many of us have witnessed, experienced, and suffered this style of leadership in our lives. Unfortunately, this individual is the kind of leader our legacy dictates; he is the type of leader that many believe we must engage to succeed.

Research Focus

Broadly speaking, the focus of this study is to assist in the construction of a new perspective on the way we think about leadership and the act of leading in organizations. The purpose for this work is to contribute to the existing knowledge and literature through a qualitative exploration of leaders' experiences with change and transition in the context of large-scale or radical change in complex systems. For the purpose of this research, adaptive systems, as in Complex Adaptive Systems (CAS), are employed in reference to the human and organizational capacity to learn and adapt through human interaction, life experience, and targeted training. Inherent in this term are the complexity theory characteristics of self-organization and emergence.

The study focuses on leaders' stories of their individual change experiences—successful and/or failed—to gain a better understanding of perceptions and actions as they navigate the demands of an increasingly complex information age. The work recognizes that many scholars

have begun to develop new approaches to leadership grounded in complexity theory (Boal & Schultz, 2007; Hazy & Uhl-Bien, 2012; Lichtenstein et al., 2006; Plowman et al., 2007; Schneider & Somers, 2006; Schreiber & Carley, 2006; Uhl-Bien & Marion, 2009; Uhl-Bien, Marion & McKelvey, 2007). Given the rapidly growing awareness among scholars and practitioners of the complexity leadership landscape, there is much territory to explore. From an ontology and epistemology premised on a view of organizations and their members as interpretive, socially constructed, sense-making systems containing multiple realities, I seek a better understanding of leader meaning-making and behavior in the change process, and a more accurate placement of leaders and leadership within complex organizational systems.

In this study I was compelled by the following questions:

1. Could our culture's enduring admiration for and promulgation of the hero leader—who is thought to be able to control the future, shield us from harm, and bring us glory—be obstructing our perspective on leadership, and hampering our ability to effectively develop and support leaders as they struggle to navigate complex change?
2. Is there a better lens through which we might view and understand today's leaders?
3. Is there a better-equipped framework for supporting leaders as they grapple with densely connected and rapid-paced organizational environments?

The intent for using a complexity leadership framework for the analysis of the narrative data follows the example of Uhl-Bien and Marion's (2009) reasoning for approaching leadership from a Complex Adaptive Systems (CAS) perspective, since "it offers a paradigm for thinking about leadership from which we can more easily explore issues that confound us from a traditional view—issues of shared, distributed, collective, relational, dynamic, emergent and adaptive leadership processes" (p. 631). The goal was to approach and interpret leaders' stories

from a complexity theory perspective in order to gain a more realistic view of the issues and challenges that leaders face during complex change, and how leaders make meaning of and respond to these challenges in today's interconnected and turbulent information age.

In recent decades, the study of change leadership has predominantly focused on the assessment of leadership competencies, as well as the follower perspective and follower perceptions of organizational leaders and their leadership styles and approaches to change. To date, there has been limited investigation of leading complex change from the leader's point of view. In a review of the literature one can identify only a handful of recent studies that specifically explore complex change from a leader perspective. In *Leading Change—Insights Into How Leaders Actually Approach the Challenge of Change,* Paul Lawrence (2015) explores "what leaders actually do" and their impact within a traditional and/or emergent approach to change. In *Emperors With Clothes On: The Role of Self-Awareness in Developing Effective Change Leadership* (2010), and *What Does it Take to Implement Change Successfully? A Study of the Behaviors of Successful Change Leaders* (2011), Malcolm Higgs and Deborah Rowland explore change context and the effect of leaders' behaviors on the successful implementation of change, works based on the authors' earlier narrative inquiry research conducted with leaders from 2000 and 2005.

Leader Sensemaking in Context

Two important constructs in this research are "sensemaking" and context. This study approaches the question of leading change in complex systems from the leader perspective, creating an opportunity to explore leader sense making relative to personal leadership style and organizational context. Therefore, it is important to understand the terms "sensemaking" and "context" as they are used here, and to position these notions in relation to the proposed study.

The term "sensemaking" as employed throughout the dissertation is meant in the context of the individual leader's meaning making in a change environment, and the behavior that results from this sensemaking process. Sensemaking, a term made popular by noted scholar Karl Weick (1995), is a reflective process by which people rationalize their own actions and the actions of others. Essentially, it is the means by which leaders make meaning from circumstances in a way that serves as a springboard for action (Weick, Stucliffe, & Obstfeld, 2005).

Complexity leadership necessitates transformation of the way our culture has traditionally viewed the leader, requiring that we let go of the notion of control and "knowing what to do," acknowledge that the future cannot be predicted, and recognize that organizations and groups are not able to move in a strictly linear path toward a predefined objective (B. C. Brown, 2011). Sensemaking is a cognitive process that facilitates non-linear systems thinking, largely in contrast to the more linear path of the traditional-style leader. Making the case for an evolved form of sensemaking required of complexity leaders, B. C. Brown (2011) describes the complexity leadership challenge:

> Traditional leadership is largely decentralized in this [complexity] approach, and those with positional power are asked to think in systems, tend to the conditions that support emergence, and focus on process rather than outcome. The literature challenges leaders to manage the polarity between equilibrium and disequilibrium—between stability and chaos—and that they foster conflict and dissonance in the system regularly. Complexity leaders are also called to see multiple causal loops, recognize patters within complex processes from the micro to the macro, and engage in improvisational dance with complex adaptive systems—listening closely and responding in an instant. Finally, they also need to remember to stabilize things when too much emergence occurs too fast so the entire system does not gyrate out of control. (p. 12)

As outlined above, one can agree that this form of leadership requires a "high degree of meaning-making maturity," and that leader sensemaking in context is a critical construct in a narrative-based study of leading complex change.

Rooted in contingency theory (Fiedler, 1964; Hersey & Blanchard, 1969, 1993), the relationship between leadership approach (or style) and the context in which they operate is considered important to leader performance (Dulewicz & Higgs, 2003). According to Higgs and Rowland (2005) and Wheatley (2000), there is an increasing focus on the efficacy of different leadership behaviors in various contexts of change. The authors suggest that the context of change can serve to dictate or guide leader behavior in the change process; therefore, I posit that context is also a critically important construct to consider. By examining leaders' stories—which reveal the sensemaking, organizational change context, and the mental models leaders use to understand and navigate the change experience—I seek to better comprehend the change process as understood, influenced, and guided by leaders in a variety of contemporary organizational environments.

Today's leaders operate in organizations that are rich with complexity dynamics. Therefore, we seek to understand a theory that moves us from the mechanistic metaphor of yester-year, to the interconnected, living systems perspective of the 21st century. To fully understand the significance of complexity dynamics on the study of leadership and its application in organizations, one must be familiar with the fundamental constructs as framed by complexity theory, and then understand the implications of this "new" science in the social sciences domain.

In the following, I introduce complexity theory as the "New Science," a term coined in 1992 by Margaret Wheatley with the first edition of her influential book, *Leadership and the New Science: Learning About Organization From an Orderly Universe*. I then provide a brief overview on the development of the theory and its role in leadership and change, emphasizing Complex Adaptive Systems, self-organization, and emergence as fundamental complexity

constructs originating in physics and math as chaos theory, then traveling to the biosciences and now found to provide important new insight, understanding, and applicability in the social sciences.

Chaos (Complexity) Theory: A New Social Paradigm

Beginning with the basic theory, an early classic in the complexity field by Gleick (1987), *Chaos: Making a New Science*, proclaims chaos to be the "century's third great revolution in the physical sciences, alongside relativity and quantum mechanics." Gleick's notable work would find its legacy in a stream of publications on chaos, complexity, and human behavior in the 1990s and the beginning of the 20th century. In *Complexity: The Emerging Science at the Edge of Order and Chaos*, Waldrop (1992) provides a compelling story-based overview of the origins of complexity theory through the eyes of the explorers in the field and their early work at the Santa Fe Institute in New Mexico.

Another renowned complexity science pioneer, Kauffman (1995), provides a portrayal of chaos theory as the beginning of a major new scientific revolution; the author contends that complexity science is a new paradigm that rivals Darwin's theory of evolution in importance. He explores the nature of life and the mysteries of life's birth and evolution through complexity and its process of self-organization. Following Kauffman, acclaimed writer and physicist Capra (1996) draws attention to philosopher Thomas Kuhn's definition of a "scientific paradigm" and the revolutionary breaks Kuhn called "paradigm shifts" (Kuhn, 1962). Like shifts that have occurred throughout history, Capra (1996) describes this "shift" in terms of a cultural transformation and shares his understanding of "the new science" as our world's new social paradigm:

> The paradigm now receding has dominated our culture for several hundred years, during which it shaped our modern western society and has significantly influenced the rest of

> the world. This paradigm consists of a number of entrenched ideas and values, among them the view of the universe as a mechanical system composed of elementary building blocks, the view of the human body as a machine, the view of life in society as a competitive struggle for existence, the belief in unlimited material progress to be achieved through economic and technological growth, and—last but not least—the belief that a society in which the female is everywhere subsumed under the male is one that follows a basic law of nature. All these assumptions have been fatally challenged by recent events. And, indeed, a radical revision of them is now occurring. (p. 6)

According to Capra (1996), the more we study the major problems of our time, the more we come to realize that they cannot be understood in isolation. He underscores that they are systemic problems, therefore, interconnected and interdependent. Wheatley (2006) echoes this message in her description of a new world order and its relevance to organizations in the second edition of her book, *Leadership and the New Science: Discovering Order in a Chaotic World*. According to Wheatley, the natural sciences merge with business management to tell a story about the nature of how people interact. Wheatley asserts that our world-view must change, and that only with a dramatic shift in the way we think about the world can we respond wisely. She ponders a world of uncertainty, with sudden shifts and a web of relationships that extend around the globe. Her book illuminates chaos and global interconnectedness as part of our daily lives, which cannot be avoided or controlled. Through the use of metaphor and a complexity perspective, Wheatley describes systems rather than isolated players and parts, and organizations that transform themselves from machines to dynamic, interconnected living systems, possessing the capacity to adapt and grow that is common to all life forms.

I was first exposed to complexity theory and leadership in complex systems through the work of Uhl-Bien and Marion. Immediately, I was struck by complexity theory and the implications of this "scientific revolution" (Gleick, 1987), but not until further reading in the area of leadership dynamics in situations of complexity that the reality of what this new science meant, and would surely become, would I fully understand its significance.

As I have come to appreciate it, complexity science constitutes a fundamental transformation in the way we think about and interact in our world. It shifts our thinking away from the bureaucracy and hierarchies that we have known, to the study of the interactive dynamics that are the hallmark of the information age. As Capra (1996) observed, it is a revolutionary transition away from the mechanistic worldview of Descartes and Newton to a holistic ecological view. More simply, it is a way of reframing our understanding of systems by using a metaphor associated with life and living systems rather than machines or mechanical systems. It is a seemingly simple transition, but one that requires a radical change in the way we think about our environment and the organizations we inhabit. It requires that we leave the security and comfort of what we have known and how we have lived and worked to enter a new and complex domain. I began also to think about the possibilities for this new science within the realm of organizational change. Could complexity theory and understanding organizations through a complexity lens make a significant difference in our ability to effectively implement change? Was our traditional, mechanistic perspective and linear approach to organizational change largely the reason for our allegedly poor track record?

The implications for leadership took center stage in the work of Uhl-Bien et al. (2007) on complexity leadership theory, and Uhl-Bien and Marion (2009) on complexity leadership approaches. In these works, the authors introduce their "new perspective" and underscore its importance to our leadership approach. This new perspective, which they label *Complexity Leadership Theory,* recognizes that leadership is too complex to be described as only the act of an individual or individuals; rather, it is a complex interplay of many interacting forces (Hazy & Uhl-Bien, 2012; Lichtenstein et al., 2006; Uhl-Bien et al., 2007). Hazy and Uhl-Bien (2012) then introduced *Complex Systems Leadership Theory* and defined complex systems leadership as

"system processes that change rules of interaction and do so in specific ways that form human interaction dynamics (HID) into a complex adaptive system in a manner analogous to how physical and biological interactions are understood as systems" (p. 710). At the core of complexity, and of a complexity leadership approach, is the understanding that the rules governing individual, day-to day human interactions and experiences are what determine the social structures that emerge (Goldstein, 2007; Hazy & Uhl-Bien, 2012).

Complexity theory represents an evolution of thinking about interactive systems that has become increasingly refined through significant contributions from multiple theorists, with a few notable examples provided here: Uhl-Bien et al. (2007) with Complexity Leadership Theory (CLT) and its integration of complexity principles with bureaucratic functioning; Heifetz (1994) and his technical or adaptive challenges perspectives; Wheatley (1992) and her application of the natural sciences to business management; Senge (1994) with his view of generative learning and systemic thinking; Morgan (1986) with his treatise on the nature of metaphor and its role in fostering a nuanced understanding of organization management; and, finally, the impact of Appreciative Inquiry with its positive approach to organizational learning (Cooperider & Srivastva, 1987). We also see an evolution of thinking in complexity methodologies, such as: Large Group Interventions (LGI) introduced by Bunker and Alban (1997); Real Time Strategic Change and its whole systems approach (Jacobs, 1994), and the numerous innovative conferencing models based on the whole-systems approach such as: Open Space Technology (Owen, 2008); Common Ground (Weisbord, 1992), and finally, World Café (J. Brown, Issacs, & The World Café, 2005).

As an organization development practitioner with a keen interest in leading change in complex systems, I have read books and articles focused on leadership, change, and complexity

by—among others—Stacey, Gleick, Waldrop, Lichtenstein, Marion, Uhl-Bien, Karp and Helgo, Battilana, Wheatley, Zimmerman, Olson, Eoyang, and Boyatzis. In short, this reading was an introduction to a new way of perceiving the world, or, as Wheatley (2006) describes her new worldview emerging from quantum physics, "one that comprehended its processes of change, its deeply patterned nature, and its dense web of connections" (p. 4). Like so many others, I had worked in—and had been tormented by—mechanistic-style organizations with hierarchies and command-and-control leaders, linear processes, and machine metaphors. Like many, it was my personal reality and our cultural legacy.

Inspired by the reading, I began to fathom the myriad ways in which leaders could operate differently in global, interconnected environments. How complexity science could usher our focus away from the individual, heroic leadership model toward an understanding of organizations as being interactive agents, shared leadership practices, and how individuals operate in contexts of complex dynamics. From a complexity perspective, I began to think in earnest about the importance of this "new thinking" and the ways that organizations and practitioners might approach change differently. In this setting the leader spotlight is dispersed revealing the emergence of leadership that waxes and wanes across the system.

In the following section, I introduce complexity leadership theory as a complexity theory model, used in the analysis of this study, that effectively assimilates leadership's traditional and complexity roles in the knowledge era.

Complexity Leadership Theory: A Three Function Model

Today's organizations must balance leading for efficiency and control with leading for learning and adaptability; or, as related to the learning and adaptive nature of leadership, for organizational complex functioning (Schreiber & Carley, 2006). Complexity science frames

leadership as a complex interactive dynamic from which adaptive outcomes (e.g., learning, innovation, and adaptability) emerge (Uhl-Bien et al., 2007). Utilizing this theoretical framework as an analytical tool, the study sought to identify leader perceptions of "adaptive outcomes" as an indicator of change and explore the intersection between change, sensemaking in context, and change behavior as illustrated in the diagram in Figure 1.1:

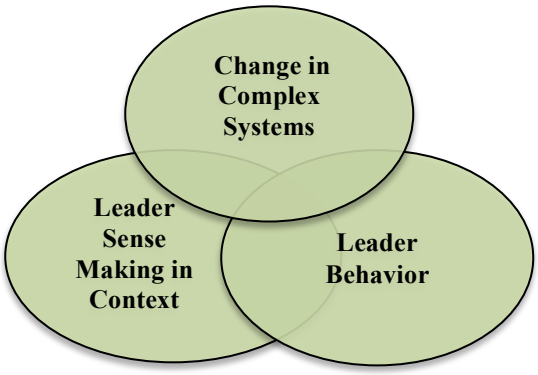

Figure 1.1. Venn diagram.

Complexity Leaders Theory (CLT) is a three-function model comprised of administrative, adaptive, and enabling leadership functions that will provide guidance in the study's delineation of leader perceptions and behavior, and assist in the analysis of sensemaking and leaders' perceptions of change outcomes. According to this model administrative refers to the more bureaucratic and traditional leader activities that seek business results; adaptive focuses on the "interfluence" or learning dynamic by which change is actualized; and, enabling constitutes the process that acts in the interface between administrative and adaptive leadership (Uhl-Bien et al., 2007). Organizational tension can develop within the administrative and adaptive functions when an overly authoritative or rigid bureaucratic control structure thwarts the organization's learning process. Similarly, the adaptive leadership function can rebel against or act independently of administrative leadership. In this scenario the enabling function plays an important strategic role in managing the coordination between the relative importance of

top-down, hierarchical dynamics and the emergent complex adaptive systems (Uhl-Bien et al., 2007).

To demonstrate the relevance of the CLT model to this work, the following describes an empirical research study by noted change and leadership scholars Higgs and Rowland. The researchers' work includes similar characteristics to this study; these include themes derived from their analysis that are comparable to those of the CLT model. The research featured leaders' roles and behaviors in the change process identified within some 70 leaders' change stories. In their analysis Higgs and Rowland (2005) identified three broad sets of leader behavior, mindsets, and practices that correspond—in varying degrees—to the CLT model's three designated leadership roles. The authors titled the three categories emerging from their research as "shaping," "framing change," and "creating capacity." Shaping, similar to CLT's administrative role, or what Schreiber and Carley (2006) refer to as "managerial leadership," is indicative of a leader-centric, top-down approach whereby the leader holds others accountable for the tasks and personally controls what gets done. Framing change is described as creating a framework that allows others to contribute to the change and is closely related to CLT's enabling function. Higgs and Rowland's third category, creating capacity, corresponds to CLT's adaptive role, and is described by the researchers as a leader's part in building individual and organizational capability and encouraging growth and learning.

Table 1.1

CLT's Functions Corresponding to Leader Behavior During Change

CLT Leadership Functions	Leader Behaviors During Change
Administrative	Shaping
Adaptive	Framing
Enabling	Creating Capacity

A significant differentiation in the comparison of the aforementioned study's research results to the CLT model is found within the administrative role, as compared to Higgs and Rowland's (2010) shaping category. CLT recognizes the administrative function as a more traditional and bureaucratic leader role focused on control and efficiency that, when effectively combined with the adaptive and enabling leader functions, is critical to the success of the change process. In contrast, Higgs' and Rowland's research analysis did not appear to find or clearly delineate the shaping behavior to be of value to the change process. In fact, from their analysis Higgs and Rowland (2010) "demonstrated that the more ego-driven leader-centric approach had a negative impact on change success in all of the contexts examined" (p. 373). According to CLT, this might indicate that the administrative function was out of balance acting as an overwhelming force suppressing the adaptive and enabling functions.

It is important here to echo noted complexity scholars who tell us that the aim of complexity leadership is not to replace traditional leadership roles but to enhance them, making leadership more contemporary and viable in the knowledge era (Lichtenstein et al., 2007; Marion & Uhl-Bien, 2009; Schreiber & Carley, 2006). In support of this concept, the work of Schreiber and Carley (2006) features complexity leadership theory and acknowledges the need for efficiency and control to effectively exploit organizational outcomes for gain. The results of their research further supports the tenets of complexity leadership theory and the need for leading for efficiency and control, while simultaneously leading for learning and adaptability (Schreiber & Carley, 2006).

Study Description

The following describes a narrative inquiry research project featuring 20 select leaders and their direct experiences with, and perceptions of, leading large-scale change in complex

organizations. The research was based primarily on in-person interviews with an array of diverse leaders and managers representing a small cross-section of U. S.-based organizations. The study participants included executives from private industry, government, non-profit, health care, and education. In this qualitative study I employed narrative inquiry methodology, using personal stories to reveal organizational, cultural, and social patterns (Patton, 2002) through the lens of the individual experiences of organizational leaders.

Though small, it is a diverse and significant sample of prominent leaders in the context of complex change, in a study that seeks to understand leadership style, change approaches, and the leaders' perceptions of his or her motivations, behaviors, and organizational responses. Through individual narratives of the change experience, the study explored leader sensemaking, or the process by which people seek to construct a narrative that brings meaning to events. Lawrence (2015) and Weick et al. (2005), characterize sensemaking as a process by which people rationalize their own action and the actions of others. The outcome of sensemaking is the ability to articulate the meaning of circumstances in a way that serves as a catalyst for action. Within the context of the process, the study investigated the motivation of leaders to use, understand, and/or adopt leadership capabilities and attributes needed to effectively guide and implement change. Moreover, the research explored whether the sampling of leaders involved in complex change were more likely to:

1. Utilize traditional leadership styles and linear change approaches,
2. Adapt to their complex environments by incorporating complexity leadership practices and emergent-based approaches, and
3. Use a combination of linear and complexity-based approaches.

Prominent leadership and change theorists argue that the context of change is an important one within which to examine the impact and effectiveness of leadership behaviors (Agle, Nagarajan, Sonnenfeld, & Srinivasan, 2006; Colville & Murphy, 2006; Higgs & Rowland, 2011). Given the appreciation for the importance of context in the organizational change process, the study linked leadership behaviors to activities involved in implementing change and sought to understand the different contextual settings for each change narrative. The study also sought to identify and document the leader's understanding of his or her change initiative(s), its context, and the initiative's outcomes or intended outcomes. Finally, the research explored leadership perceptions of the skills, attitudes, and values required to facilitate change in complex systems, and how leaders—and their organizational change approaches—can and do influence this process in positive and/or negative ways.

Research Objectives

Leadership is becoming increasingly recognized as a crucial issue for organizations facing change in complex and volatile environments: "There is growing evidence that the role of leaders in the change process does impact significantly on the success of the change" (Higgs, 2009, p. 166). Consequently, there is mounting interest in the role of leaders in a change context, and the extent to which their behaviors can either contribute to or detract from successful change implementation. A number of empirical studies demonstrate clear links between leader behaviors and a variety of follower behaviors and their performance (Higgs & Rowland, 2005, 2011; Huff, 2000). Therefore, a key question becomes, what leadership behaviors are most likely to facilitate the successful implementation of change in complex systems?

Based on the literature and my personal consulting experience, I believe that leadership is a critical influence and support mechanism in the organizational change process. However, I

question the extent to which leaders overestimate their ability to effectively understand and manage change, or consider the possibility that most leaders simply do not have the knowledge, awareness, or conceptual capacity to optimize change success in their organizations. As noted earlier, a significant amount of research examines change leadership through the external perspective of the follower, but very few studies can be found that include the leaders' own perspectives. Therefore, I explored the fundamental question of change leadership through the documentation and analysis of leadership stories about the individual experiences of leaders leading change from their multiple and diverse perspectives. These personal narratives reveal specific leadership behaviors, the mental schemata employed, and the importance of organizational context in the change implementation process—as well as cultural and social patterns exposed through the leadership experience.

The study's objectives included the following activities:

1. Identify the type of leadership styles and change approaches currently being used in a diverse selection of change leaders and their initiatives;
2. Determine if a gap exists between these leaders' perceptions of the essential behaviors required of successful change, and the leader behaviors that have proved most effective at leading change in complex systems, based on the leadership and change literature;
3. Explore leaders' mental schemata and sensemaking (process of understanding events/behaviors and charting a course of action) of the change process;
4. Examine leaders' perceptions of their behaviors, actions taken, and the consequences experienced during the change process;

5. Investigate the leading change behaviors most likely to effectively facilitate change in complex systems; and
6. Study the influence of organizational context on leader behavior during complex change.

Thematic Assessment

For a more in-depth exploration of leader motivation, sensemaking, and the values that guide their behavior, the study employed a thematic evaluation of leader narratives. A thematic analysis facilitated access to a variety of phenomenological information as an inductive beginning to my inquiry (Boyatzis, 1998), as well as a systematic assessment of convergent and divergent change leader topics. In the selection of a thematic analysis I acknowledged the important role of storytelling. I understood that facts are part of an interpretive process and it is possible to narrate the same events in radically different ways, depending on the context, values, and interests of the narrator (Riessman, 1993). Important to this thematic analysis, Daiute (2014) contends that the examination of values as demonstrated through narrative "brings a profoundly important strand of meaning into view" (p. 76).

Research Questions

The research questions were guided by complexity-based notions of what it takes to succeed as a leader implementing change and building adaptive organizations in complex systems. Through a complexity framework the study focused on the key components of organizational change: leader sensemaking and behavior, the organization's change approach (linear and/or complex), the organizational change context, and the leaders' perceptions of the individual and organizational response to change efforts. The primary questions focused on leadership behavior and change approach in the context of change implementation in complex

adaptive systems, as derived primarily through the narrative change story. The study probed leaders' stories based on the following points of interest:

1. Leaders' views of their roles—specific to leadership style and change approach.
2. Leaders meaning-making (sensemaking) of the change environment and courses of action based on their own cognitive processes. (For example, what drives a leader to determine the need for change and initiate a change process?)
3. Leader motivation and the internal and external contextual factors perceived as facilitating or hindering success.
4. What it takes to create and sustain an environment conducive to change, and the key elements of this environment.
5. How leaders engage and enable followers in the change process.
6. The criteria and definition for success.

Researcher Perspective

I approached this study with more than 25 years of experience working in and with a variety of organizations: from living and working abroad as a Peace Corps volunteer in North Africa and Eastern Europe, to working in the Federal Government; then, as part of an executive team with a consultant and government contracting firm; and, now, as an independent consultant specialist helping organizations conceptualize, implement, and manage change. As a witness to a variety of people, cultures, and their organizations, I have developed a healthy appreciation for the complex environments where we live and work, and a deeply humanistic perspective on leadership and the change process in complex systems. Through years of experience, and supported by my research, I have learned to appreciate the scope of a leader's influence within the organization, as well as his or her influence on the change process as evidenced through the

way organizational members perceive and navigate transitions. Moreover, I have learned that change happens, or fails, through individual sensemaking and within human interaction; ultimately, change and the transformation it produces begins and ends in the hearts and minds of people.

As a result of the learning described above, I approach my consulting practice knowing that each organizational change project is as unique as the personalities involved and it should be managed as a diverse and complex undertaking. Based on my experiences and studies, I have come to appreciate change as a truly complex phenomenon requiring a variety of approaches. I have developed a new perspective in keeping with Burnes (2005), who asserts that increasingly academics and practitioners view organizations through the lens of complexity theory, and this is beginning to have a profound impact on the view of how organizations should be managed and changed.

This study reflects a desire to understand effective change leadership and the influence of complex approaches to change in what has been a traditionally linear setting. Throughout my professional life, I have remained intrigued by the challenge posed by the preponderance of failed change initiatives that I have personally witnessed, and that have been reported in the literature by experts in the field (Burnes, 2005; Higgs & Rowland, 2005; Kotter, 1995). In a search for alternative approaches, I have sought to understand organizations as complex adaptive systems and how the application of complexity principles might help formal and informal organizational leaders identify and respond to change within dynamic, interactive environments. In this context (and with respect to the leadership role in self-organization and emergence, which I will address subsequently in this work) I emphatically support the notion, bolstered by complexity theory, that "old-fashioned bureaucracies—commanded and controlled by a few

leaders—cannot respond to today's rate of change with the speed and precision of numerous coherent, intelligent, and self-disciplined agents who self-organize with integrity and overtly coordinate their co-evolution" (Kelly & Allison, 1999, p. 8).

Dissertation Outline

The dissertation is organized in six sections. The introduction establishes the focus of the study by outlining the social and organizational transformations of an increasingly complex and global environment. The rationale for the research is provided by describing its purpose, as well as its significance to organizational leadership, change research, and theory and practice in complex systems. Section two presents a critical review of the literature relevant to leadership and change theory, complexity theory, research, and practice. Additionally, the literature review touches upon theories of human interaction, cognition, and sensemaking, as relevant to the leadership focus of the study. Section three provides a description of the research methodology, examples of the probe questions used, as well as the research procedures employed and the ethical issues considered. The methodology section includes a rationale for the research methods utilized in the study. Section four introduces the study's participants, the findings based on a thematic analysis of the data collected from 20 transcripts, and a summary presentation of the data results in a diagram format. The results section concludes with questions generated by the study and addressed in the fifth section of the document, which provides a detailed discussion of the findings presented in the previous discussion of the study's results. This section relates the findings to the literature, discusses potential applications, and addresses questions posed in the previous section. The sixth and final section of this dissertation presents the study's implications, conclusions, and closing reflections.

Review of the Literature

Purpose

The purpose of this section is to examine the theories and models relevant to the study of leading change in complex adaptive systems. An interdisciplinary approach is used to provide for the application of complexity theory and the related field of social science to the study and practice of leadership and change. Theories and literature from the fields of natural science, social science, leadership, cognitive science and psychology, organization development, and management are reviewed to create an integrative view of how complexity theory might influence and inform leadership and change in an organizational setting.

At the forefront of this study is a specific focus on the leader experience and his or her sensemaking in today's rapid-paced and richly interconnected organizational environments; in the background is the ever-present legacy that depicts the role of leaders as directing mechanistic-like organizations in a linear fashion toward seemingly knowable and controllable outcomes. In contrast to this model, the literature included presents an emerging view of organizations as living, evolving systems challenging the fundamental premise of the traditional leadership role. Derived from the research and scholarship of complexity theory, complexity leadership, cognitive science and radical or complex change, the goal is to provide a foundation to examine further the significance of a new and promising approach to leadership and leading change in today's increasingly connected, turbulent, and complex organizational environments.

This following review is divided into six primary parts that explore the new paradigm of complexity and the different facets of the leadership transformation from a mechanistic age to that of the information age. Part one provides a fundamental understanding of complexity theory stemming from the natural sciences and moving to its application in the social sciences, while

exploring its relevance to leading change in organizational settings. Part two centers on the critical role of human interaction in building complex systems. Human interaction is at the heart of this study in its illumination of how leaders think about and act on change in the context of their organizational settings and immediate external environments. Part three considers leader cognition and sensemaking of the change process in an exploration of how leaders comprehend and act in their roles as change leaders. Part four focuses on theory to practice and illustrates complexity leadership in real-world organizational settings. This segment also highlights a selection of complexity-based processes and tools in a demonstration of specific methods to aid in the effort to move from complexity theory to its real-world application. Part five examines the different roles that leaders may play in the change implementation process, specifically exploring complexity leadership and the role of the leader as an enabler of people and facilitator of change in complex systems. The final segment of the review of the literature looks at linear versus non-linear approaches to change and explores the way complexity science is transforming our perspectives on leadership in complex systems.

This body of work considers the extant literature that pertains specifically to leading change in complex adaptive systems; under the complexity umbrella, the research and scholarship leads to a fuller understanding of the transition from leaders of the industrial era to today's leaders navigating the information age, and how this transition is forcing a transformation of traditional roles. The work is designed to facilitate a fundamental understanding of complexity theory and complexity leadership theory as applied to organizational change in complex systems, while, at the same time, exploring various perspectives on leaders' cognition, self-awareness, and sensemaking about their roles in the change process. The intent is not to conduct an exhaustive search in each of the interrelated

topic areas; rather, it is to provide a thoughtful review of the current and leading literature so that the reader might gain a basic understanding of the concepts and theories.

The following begins with the advent of the paradigm shift, as facilitated by complexity science and illustrated through metaphor from the era of the great machine to the era of the living system. It continues with an explanation of key concepts and the manner in which these play a role in the way we view leadership and leading change in the modern era. Though little empirical data exists that specifically addresses leaders' self-awareness and cognition in the change process, this review examines leaders' approaches to change in complex organizations from a personal awareness platform. The intent is to gain insight into the way leaders think of and act on change in their organizations, and to investigate the leadership role within the context of change.

The review explores a relatively new concept, the application of complexity theories to leading change. As with any new theory, the acceptance of chaos and complexity theories from the physical sciences into to the social sciences is not without controversy. With an air of amusement, Kurt Lewin introduced his Field Theory from 1943 by describing what he considered to be the typical process for acceptance of a new theory:

> The history of new theories frequently shows the following steps: At first the new idea is treated as pure nonsense, not worth looking at. Then comes a time when a multitude of contradictory objections are raised, such as: the new theory is too fancy, or merely a terminology; it is not fruitful, or simply wrong. Finally a state is reached when everyone seems to claim that he had always followed this theory. This usually marks the last state before general acceptance. (Lewin, 1951, p. 43)

In the far-reaching search for theories, models, and frameworks that foster organizational excellence, Burnes (2005) warns that some social scientists may misuse complexity theories by espousing them even though they do not understand them, or by importing them into the humanities without conceptual justification. Rosenhead (1998) cautions that those who seek to

promote complexity-based prescriptions for managing and changing organizations should make it clear that these are not, as yet, based on any hard evidence that they actually work. In response Stacey, Griffin, and Shaw (2002) reminds us that Rosenhead's criticism rests on an implicit assumption that the only valid form of knowledge is that of empirically supported general propositions, that is, a positivist epistemology. However, my own position is aligned with British complexity scholar Ralph Stacey and his colleagues who assert that the scientific method is not the only valid form of knowledge, especially when it comes to very complex human dynamics. Regardless, it seems likely that these scholars would agree with the notion that effective leadership and change in today's complex organizations represents a messy, new frontier that demands courage, exploration, and experimentation. Resolve intact, one can move forward resolute in the knowledge that today's theories and models must continue to develop, to be questioned, to evolve, and to multiply in support of a rapidly changing world.

Complexity Science: A New Paradigm

Lipmen-Blumen, in her 1996 Pulitzer Prize nominated book, *The Connective Edge: Leading in an Interdependent World*, argues that to succeed in what she calls the "Connective Era" leadership must be redefined. She qualifies the challenge for today's leaders as being caught in this moment in history between two antithetical forces: interdependence and diversity, pushing in opposite directions and generating tensions that are transforming the context under which leaders must lead. Lipmen-Blumen refers to these tensions as the hallmark of the Connective Era. She describes the context of interdependence and diversity in the following passage:

> Interdependence, driven largely by technology, connects everyone and everything, everywhere. It drives us toward collaboration in alliances, networks, and coalitions. Interdependence focuses on over-lapping visions, mutual problems, and common goals. It seeks out similarities and promotes universalism. Consequently, traditional authoritarian,

> competitive, and ruggedly individualistic leadership, which sees only its own vision, is faltering badly. (Lipmen-Blumen, 1996, p. 13)

During the industrial era, with its abundant factories and heavy manufacturing, organizations were likely to be viewed as mechanistic or machine-like; organizational activity as linear, predictable, and orderly; factory workers as replaceable cogs in a mechanistic wheel; and in-control leaders having power to effectively manipulate their organizations, systems, and people. Until the late 20th century, the world order was largely determined by the rational/analytical perspective of Weber (1947), leading to the emergence of concepts such as "Taylorism" and "Fordism." In stark contrast, the new world-order is a postmodern knowledge economy characterized by uncertainty and turbulence (S. L. Brown & Eisenhardt, 1998; Ford, 2010; Schreiber & Carley, 2006).

As Lipmen-Blumen (1996) describes, leaders today face increasingly dynamic environments driven by a technological revolution and economic globalization resulting in rapid and continuous change. Many affirm that the increasing rate and complexity of change is becoming an integral aspect of organizational effectiveness, rather than a periodic necessity (Higgs & Rowland, 2001; Kotter, 1996; Weick, 1995). As a result, the need for labor competencies wane while the need for intellectual competencies rise. According to Schreiber and Carley (2006), to survive what Thomas Kuhn (1962) refers to as a paradigm shift, organizations must respond to complex world challenges by improving the rate at which they learn. At the close of the 20th century Drucker (1998) warns of a perilous gap that exists between the old and new paradigm; in the knowledge economy "much of what is taught and practiced in the name of management are hopelessly out of date" (p. 162). In these more complex, competitive, and tumultuous settings, there is a need to transform strategies, structures, and processes in order to respond to business challenges and improve organizational success

rates (Higgs & Rowland, 2001). In their book *Getting to Maybe: How the World Is Changed,* Westley, Zimmerman, and Patton (2007) propose the insights that come from complexity theory do not guarantee success; rather, these insights can be used, as the title suggests, to improve the likelihood of success. Nevertheless, increasingly scholars and practitioners view complexity science as an effective means to navigate a rapidly changing world. Simultaneously, many leaders intuitively understand the need for new practices, methods, and models to effectively navigate turbulent environments.

The next section follows the introduction of a new paradigm with a description of complexity theory: a new science offering a perspective based on metaphors that move us away from the mechanistic age of the industrial era to the age of living systems in the knowledge era.

Complexity Theory: A new science defined. Considered a "new science," complexity theory, the theory of living systems, originated with mathematical Chaos Theory, emerged in the physical sciences and then moved to the social sciences (Marion & Uhl-Bien, 2001; Regine & Lewin, 2000; Wheatley, 1992). The term complexity science is an expression commonly used to describe a set of interdisciplinary studies that share the idea that all things tend to self-organize into systems able to adapt to uncertain environments. Therefore, the science of complexity theory concerns the study of interacting systems (Marion & Uhl-Bien, 2001). Modern complexity theory has its roots in the work on general systems theory done by Ludwig von Bertalanffy during the late 1940s and 50s, as well as Weiner's work on cybernetics in roughly the same period. The Santa Fe Institute in New Mexico, where much of the early work on complexity science was conducted, has witnessed a dramatic increase in the attention to complexity theory, complexity leadership and, most recently, leading in complex adaptive systems. This explosion of interest has resulted in a proliferation of complexity related literature

and continued prominence of the Institute as the leading center for the study of complexity theory in the United States.

At its core, complexity theory as applied to organizations is about the interaction dynamics amongst multiple, networked agents (people), and how emergent events—such as creativity, learning, or adaptability—arise from these exchanges (Marion, 2008). As an interdisciplinary phenomenon complexity theory is, by no means, singular. Rather, it serves as a multipurpose label for a number of theories, ideas, and research programs that are derived from scientific disciplines such as mathematics, biology, chemistry, and physics (Cilliers, 1998; Marion, 1999; Styhre, 2002). In seeking to apply complexity theories to organizations Lissack (1999) makes an important distinction when he reminds us: "complexity is less an organized rigorous theory than a collection of ideas" (p. 112). Many of these complexity-based ideas, theories, and models have been around for decades, coming to light now within a comprehensive and integrated framework. Importantly, the term "complexity" here does not mean intricate or complicated. The meaning is based on the Latin form of the word *complexus*, as in comprehension and wholeness. It is a specific term that refers to the types of interactions that occur between their elements; it is a word drawn from the "complex" dynamics that result from a rich, evolving interaction of simple elements. Otherwise, the term refers to a high degree of systemic interdependence, which among other things leads to non-linearity, order creation, and emergence (Schreiber & Carly, 2006).

The complexity-based model originates from research into the behavior of complex systems and presents a world-view in which these entities—including organizations—are seen as organic wholes and living organisms. They are nonlinear, adaptable systems, thought to be capable of self-organization and emergent behavior and rife with discernable patterns. "Just as complexity has become an overarching theoretical paradigm in the natural sciences, it has

provided the basis for a paradigm shift in the social sciences, particularly in leadership and organizational studies" (Hazy & Uhl-Bien, 2012, p. 2). In their review of Complex Systems Leadership Theory (CSLT), Jennings and Dooley (2007) describe this paradigm shift as far-reaching, "involving a reconceptualization of the organization from a mechanistic bureaucratic system to a complex adaptive system; order and stability are replaced by complexity and dynamism as dominant characteristics, and adaption rather than equilibrium are the primary object" (p. 22).

The emergence of an organization theory based on the complexity model has enabled new ways of examining and theorizing about organizational activities (Styhre, 2002; Tsoukas, 1998). The implications for real-world organizational leadership are equally momentous: complexity will require managers to "rethink the nature of hierarchy and control, learn the art of managing in changing contexts, promote self-organizing processes, and learn how to use small change to create large effects" (Burnes, 2005, p. 82). "Rather than focus at the macro 'strategic' level of the organizational system, complexity theory suggests that the most powerful processes of change occur at the micro level, where relationships, interactions, small experiments, and simple rules shape emerging patterns" (Olson & Eoyang, 2001, p. xxxiii). Academics and practitioners increasingly see the new science as a way of understanding organizations and promoting organizational change (Burnes, 2005; Chiva, Grandio, & Alegre, 2010; Stacey et al., 2002).

To develop an understanding of complexity theory and its application to the social sciences it is beneficial to recognize where it originated and why it spread. Complexity theory began with Chaos Theory, a branch of mathematics focused on the behavior of dynamical systems that are highly sensitive to initial conditions. The theory spread rapidly through the physical sciences and then to the social sciences once experts in their respective fields recognized similar

behaviors of sensitivity to initial conditions, self-organization, and emergence.

According to Burnes (2005) it has only been in recent times that a sufficient body of academic work has been amassed to recognize the potential of complexity theories in organizations. Burnes gives credit to Ralph Stacey for being the first to link complexity with organizational change in his 1991 book *The Chaos Frontier*. Since then Stacey has published extensively on the topic, and in 1995 he created the Complexity and Management Centre at the University of Hertfordshire to provide a research institute in England for the study of complexity theories. According to Stacey (2012), the choice of the term "chaos" by those studying nonlinear models was unfortunate because most people immediately think it means utter confusion. He reminds us that mathematical chaos is not about utter confusion; rather, it signifies patterns where we thought there were none. Lorenz (1963) clarifies Stacey's meaning with his definition of chaotic systems as "Processes that appear to proceed according to chance, even though their behavior is in fact determined by precise laws" (p. 4). Styhre (2002) also describes change in non-linear systems:

> Theories suggesting non-linearity as being an underlying structure to social and natural systems recognize that all changes are disruptive, discontinuous, fluid and fluxing. Organization change then becomes not as much a stepwise implementation as it is a continuous and vision-governed adaptation to external changes and emerging conditions. (p. 343)

Most importantly, complexity theory offers a radically different perspective on leadership in the information age, and how we might manage and embrace change in today's organizations. In the following Complex Adaptive Systems (CAS) and related complexity constructs are explored to offer the reader an understanding of their roles and their importance to modern-day organizations.

Complex Adaptive Systems (CAS). To grasp the importance of complexity theory the reader is aided by understanding Complex Adaptive Systems (CAS) as units within complexity science that are found in every organization. Contrary to mechanical systems, CAS are like living organisms (plant, animal or human), that have the ability to self-organize and adapt to their environments; where the behavior of individual agents following simple rules can lead to patterns that can be identified and discerned.

For the purpose of this review and the subsequent research, complexity theory is framed as the study of patterns of behavior that naturally emerge from dynamic interaction among adaptive agents (Marion, 2012). To further distinguish the theory, whereas complexity science relates to a particular behavior of complex systems, CAS are basic units of analysis in complexity science consisting of interacting subunits or agents following simple rules. For example, consider the Women's March in Washington, DC, in January 2017 as a CAS, people (adaptive agents) following the simple rule of peaceful protest. The three basic principles that characterize CAS are: (a) order is emergent as opposed to hierarchical; (b) the system's history is irreversible; and (c) the system's future is often unpredictable (Olson & Eoyang, 2001). Holland (1995) coined the term complex adaptive systems, defining it as neural-like networks of interactive agents. "Agents are semiautonomous units that seek to maximize some measure of goodness or fitness by evolving over time" (Dooley, 1996, pp. 2–3). These agents are uniquely desirable in their ability to adapt rapidly and creatively to environmental changes (Uhl-Bien et al., 2007).

CAS consist of a large number of agents, each of which behaves according to its own principles (rules) of local interaction that require each agent to adjust its behavior to that of other

agents (Stacey et al., 2002). In other words, they are built from the local behavior of the system agents and their behavior includes self-organizing and learning:

> They are self-organizing in that there is no overall blueprint or external determinant of how the system develops; instead the pattern of behavior of the system (self-organization) evolves or emerges from the local interaction of the agents within it. (Burnes, 2005, p. 79)

Examples include social systems, ecologies, economies, cultures, politics, organizations, technologies, traffic, weather, etc. (Dooley, 1997). Stacey (1996) defines the feedback systems that constitute a CAS in terms of adaptive feedback (learning) networks:

> An adaptive nonlinear feedback system is a network consisting of a large number of agents, each of whose behavior is determined by a shared schema consisting of a few rules that are fixed over time and apply to all agents without exception. (p. 72)

In contrast to deterministic nonlinear feedback systems, even the simplest adaptive systems (CAS) adjust their behavior in light of its purpose. In other words, adaptive systems learn, at the very least, in a simple single loop manner, whereas deterministic or linear systems do not (Stacey, 1996). Complexity theory focuses on understanding the dynamic behaviors of such networks, rather than on predicting stable, central-tendency patterns of relationships (Marion, 2012).

When we move from traditional, mechanistic metaphors of the industrial era to view organizations as complex adaptive systems we are using a different model to understand organizational behavior that makes contextual sense (Marion, 2012). The term contextual as used by Marion here refers to "complexity conditions" or "leverage points that administrators can influence in order to foster or suppress complex behaviors in a system" (Marion, 2012, p. 7). Examples are the four conditions identified by Lichtenstein and Plowman (2009) as a result of their analysis of three studies of emergence in complex organizations: disequilibrium, amplifying

actions, recombination (self-organization), and stabilizing feedback. Note the definition of these and other contextual conditions in Table 2.1 adapted from Marion (2012, p. 8):

Table 2.1

Contextual Conditions That Foster Self-Organization and Emergence in CAS

Contextual Condition	Definition
Disequilibrium	A state in which there is a "major disruption in system behavior—A new regime of significantly increased or decreased activity that pushes the system far beyond its existing (normally accepted) range of activity" (Lichtenstein & Plowman, 2009, p. 620).
Amplifying actions	State in which small fluctuations in one part of the system can have a significant, nonlinear impacts on other parts of the system.
Recombination or self-organization	Occurs when agents and resources reorganize into new patterns of behavior.
Stabilizing feedback	Negative feedback that suppresses amplifying effects, thus allowing the new system to stabilize.
Interaction	Agent communication
Interdependency	A state in which the satisfaction of the need preferences of one person is influenced by the actions of another person.
Diversity of ideas and heterogeneity of personnel	Ideas and people representative of multiple preferences, outlooks, worldviews, and so on.
Catalyst	Agents, processes, or symbols that speed the formation of a given dynamic.
Tags	Tags are persons, processes, or symbols that "facilitate selective interaction" (Holland, 1995, p. 14); thus a common interest, belief, or task is a tag that facilitates the identity of a group.
Culture of expectation	A climate that expects agents to interact, that embraces heterogeneity, where agents are expected to work through process-related conflicts, to be creative, to learn, to be adaptable, and so on.

To illustrate contextual conditions outlined in Table 2.1, consider the 2016 presidential election of Donald Trump. The election represents a disequilibrium event that became the

catalyst for massive self-organization within CAS in the United States and around the globe. The Women's March on Washington in January 2017 and the many sister marches occurring in cities around the world are specific examples. The pink hats worn by many of the women in these marches represent tags that facilitate selective interaction and the identity of a group. Moving toward a practical application of complexity theory, Wheatley (2006) underscores the importance of chaos in organizations with her description of complexity science as the necessary process for the creation of new order, achieved through the presence of a few basic principles (simple rules) that generate diverse and intricate social or organizational patterns.

In 1950, Weiner, considered by Capra to be a brilliant mathematician and philosopher, underscores the importance of simple rules in the creation of organizational patterns in his recognition that notions of message, control, and feedback referred to organizational communication patterns. Weiner later expands the concept from patterns of communication and control common to animals and machines, to the general idea of pattern—and therefore, simple rules—as a key characteristic in life (as cited in Capra, 1996). According to Marion (2012), aggregations and the patterns they create can be identified, supported, and influenced:

> It's about how aggregations of ideas and people form, how interactive aggregates behave across time, and what processes (complex mechanisms) emerge and drive the behavior of the aggregates. Outcomes of complex dynamics include change, especially precipitous or unanticipated change…and the emergence of new forms and new ideas. Such outcomes are useful because leaders can capitalize on them to foster such things as organizational creativity. (p. 185)

From the perspective of complexity leadership, complexity theory allows one to analyze the system and identify organizational patterns and trends from a more holistic perspective. In the following sections I introduce a complexity science perspective on leadership as a whole-systems endeavor and explore the important complexity constructs originating from science that influence the way we perceive and act on leadership in complex systems.

Dissipative structures. Originating from chaos theory, and fundamental to the CAS concept and to the notion of organizations as complex systems, is the work associated with the Nobel Prize-winning scientist Illya Prigogine on dissipative structures. According to Prigogine's work, a dissipative structure is a semi-stable configuration that operates in accordance with non-linear logic, meaning it does not respond to external pressures and manipulations in a linear manner (Prigogine & Stengers, 1984). It is a system that responds to increasingly complex environments by importing greater resources from outside and exchanging more resources within their boundaries to achieve greater degrees of fitness (Boal & Shulz, 2007; Leifer, 1989). One might consider the disappearance of horse-drawn wagons and buggies and the advent of the automobile as a concrete example of this notion of a complexity response to achieve greater degrees of fitness.

The contradictory term "dissipative structure" is meant to convey a paradoxical reality, that disorder can be the source of new order. CAS are often described as dissipative structures because, like organizations, they dissipate unless energy is fed in from the outside, and they rely on a measure of disorder to regenerate. (Consider again the political protest group that forms spontaneously in response to a perceived breakdown of fundamental values within a governing body, fed by external energy and generated by a perception of disorder). The term, derived from the physical sciences and coined by Prigogine (Prigogine & Stengers, 1984), is a notion foundational to creating new patterns of organizational behavior. As behavior and their interconnected systems collapse and renew into improved forms they create patterns that build order and guide leader influence.

Prigogine and Stengers (1984) discovered that the dissipative activity of loss was necessary to create new order. Critical then, is the notion that dissipation does not mean the

death of a system. Rather, it is part of the process by which the system lets go of its present form so that it can reorganize in a manner better suited to the demands of its changed environment. Consider, again, the automobile and the fate of horse-drawn wagons and buggies. In a dissipative structure, anything that disturbs the system plays a crucial role in helping the system self-organize into a new form of order (Wheatley, 2006). If an organization, as a living system, can absorb disruption and maintain its identity, it can self-organize to a higher level of complexity and achieve a new form of itself better able to deal with the present. IBM and Kodak are organizations that serve as good examples of macro-level dissipative structures. As the demand for mainframe computers declined in the 1980s, IBM moved from mainframe computers to personal computers assuming an early lead in the personal computer industry. With a decline in the sales of photographic film in the 1990s the Eastman Kodak Company struggled, resulting in the venerable company filing for bankruptcy in 2012. In 2013 Kodak reinvented itself by liquidating much of its business and selling off patents to emerge as a new and viable technology company focused on imaging products. A recent example includes Amazon's transformation from an internet-based bookstore to an international electronic commerce and cloud computing company, and now the most valuable retailer in the United States.

Butterfly wings. In certain positions a dissipative structure can absorb significant external pressure, while in others it can be radically changed by even the smallest disturbances (Styhre, 2002). This phenomenon is illustrated in the "butterfly effect," a concept that originates with meteorologist Edward Lorenz (1963). Simply put, the butterfly effect means that small causes can have big effects. Lorenz found that in weather systems even a small, apparently insignificant, amount of turbulence, such as the flutter of a butterfly's wings, could lead to radical and unpredictable consequences. In complexity terms, the butterfly effect is the sensitive

dependence on initial conditions in which a small change in one state can result in large differences in a later state (Burnes, 2005). Stacey (1996) describes the sensitive dependency on initial conditions in terms of positive and negative feedback:

> The system utilizes positive and negative feedback, flipping autonomously from one to the other, rather than either negative feedback, which can produce stability, or positive feedback, which produces instability. This state makes it possible for tiny changes—so tiny that it would be impossible to detect or measure them, to escalate into major qualitative alterations in the behavior of the system. This 'sensitive dependency on initial conditions' means that, for all practical purposes, links between specific causes and specific effects, between specific actions and specific outcomes, are lost in the complexity of what happens. (p. 483)

Rosa Parks is an example of this phenomenon. Her refusal to give up her seat on the bus changed the coarse of history. Yet, why Rosa? Why not another incident of the many that occurred during the Civil Rights Era? As Stacey describes and the butterfly effect demonstrates, complex processes can be quite sensitive to initial conditions, to the point that two entities with very similar initial states can follow radically divergent paths over time (Anderson, 1999, p. 217). Echoing Anderson and addressing the concept of emerging patterns, Wheatley (2006) adds that chaos can amplify small changes in the organizational environment, causing the instability necessary to transform an existing pattern of behavior into a new, more appropriate one. The notions of dissipative structures and the butterfly effect as applied to organizations, coupled with the sheer complexity of human interaction, helps to explain why absolute control and predictability of organizational outcomes (change) is—and has always been—an unfortunate myth promulgated by a mechanistic and linear leadership approach.

Attractors. An important element of complexity dynamics and essential to the change process in complex systems is the concept of attractors. In essence, an attractor is a dynamic that influences behaviors, and can create characteristic behavioral trajectories. Simply defined, the phenomena that drive a fad—as in America's obsession with reality television or celebrity

worship—are examples of attractors. Following our political theme, the Trump administration, its political appointees, and the numerous executive orders signed in the first few days of the Trump presidency serve as an example of attractors generating numerous political protests in the period after America's 2017 inauguration.

As described by Snowden and Boone (2007), attractors are "phenomena that arise when small stimuli or probes resonate with people" (p. 7). From an organization change perspective, it is a state of behavior that the system tends toward or is attracted to that establishes stable equilibrium. Accordingly, Uhl-Bien and Marion (2009) include the "attraction to socially defined, isomorphic preferences for acting or organizing" as an attractor (p. 631). According to Stacey (1996), and as supported by Shaw (1997), agents find meaning and identity in the process of interaction, resulting in a behavior system where meaning and identity are developed into narratives. It is these narratives with their themes and history that determine the ordering of behavior and can therefore be considered to be attractors (Blomme, 2012). Therefore, one might consider an individual's and an organization's vision and values as attractors.

As attractors gain momentum, they provide structure and coherence to a system. However, there is a challenge and it lies with entrapment. Mature organizations can become trapped when people or groups become entrenched within the landscape of a powerful attractor, creating a barrier for the organization's change efforts, and daunting challenges for agentic actors attempting to change a system. Attractor entrenchment can happen in two ways: first, a system can become committed to a person, process, or technology (attractors) that have been perceived to have a positive influence and support success and security of the individual, group, and/or organization. Moving from a powerful attractor to one that is unknown or untested could be perceived as dangerous to organizational health. Second, once a system has been embedded

within an attractor it develops dependencies with other systems in that attractor, becoming interdependent and creating barriers to withdrawal (Arthur, 1989). Therefore, once a system has become embedded through commitment and interdependencies, it can become resistant to external perturbation.

For the reasons described, the concept of attractors plays a significant role in leading complex change. Leaders must be cognizant of the multiple attractors at play in any given change initiative, and the organizational systems embedded within them. In respect to complex change, if we also recognize attractors as the way in which agents influence each other in a behavior system (Vallacher & Nowak, 2007), we can then focus on the interaction between formal leaders and followers and appreciate attractors as formal leadership behavior (Plowman & Duchon, 2008).

Edge of Chaos. An important characteristic of complexity theory is Stacey's (1995) notion of nonlinear dynamics yielding "bounded instability" located at the edge of chaos. The phrase "Edge of Chaos" is frequently used among the multiple terms in the complexity literature. It means a form of organizational function or agent interaction found in the transition phase between order and disorder zones of operation for complex adaptive systems (Stacy, 1995). According to Stacey, three forms of order-disorder exist in complex systems. In organizations, as in all complex adaptive systems, these are: stable equilibrium; explosive instability; and bounded instability. Stacey (1995), considers bounded instability to be a "profound insight coming from the science of complexity" and describes it as a "third state of behavior, a state which is neither stable nor unstable, but both at the same time" (p. 482). The many protest groups and town hall meetings in the wake of the early days of the Trump Administration might be considered an example of bounded instability.

Due to the risk inherent in both stable equilibrium (atrophy) and explosive instability (destruction), it is only within bounded instability (innovation) that complex systems are seen as having the capacity to transform themselves in order to survive (Burnes, 2005). Under conditions of bounded instability organizations, their systems, and agents are ideally poised at the edge between order and chaos. In this position they are able to avoid falling over the edge and into chaos through a limited number of simple rules. As previously noted, simple rules (such as peaceful protest) are the few basic principles that provide the necessary structure to generate diverse and intricate organizational patterns. These rules limit chaos and provide relative order, yet they also allow for the tension and diversity required to stimulate innovation and create an environment conducive to self-organization and emergence.

Though influenced by leadership and context, within the organizational zone between order and disorder (edge of chaos) every agent has an individual choice to make about the way he or she interacts, referred to as "bounded choice." According to Osborn, Hunt, and Jauch (2002):

> In organizations it may be argued that there are basic ''laws'' illustrated by decision rules of scripted relationships between organizational members in an institutional arrangement. In this sense the system is deterministic, but there is human agency. Each time an agent interacts with another the agent is free to follow, ignore or slightly alter the institutional arrangement. There is bounded choice. (pp. 822–823)

Further, Stacey (2003) contends that people are not unthinking molecules; they are inclined to exercise free will, pursue their own objectives, and interpret events in differing ways. As human agency in organizations induce patterns, the Edge of Chaos (bounded instability) and bounded choice describes specific behavior that is inherently unpredictable over the long-term, but nevertheless has a recognizable pattern or structure creating behavior and short-term outcomes that are predictable.

Leadership at the edge: A collective affair. Complexity Science broadens the view of leadership from an individual interpersonal influence to that which stresses collective influence. Therefore,

> examining leadership at the edge of chaos moves the analysis from studying the combined impact of leadership and context on agent performance to examining the co-evolutionary dynamics among the environment of the organization, its viability in the setting, and its collective leadership. (Osborn et al., 2002, p. 823)

The authors suggest, rather than relying on a single transformational or charismatic leader or executive team, order, cohesion, and viability are likely to emerge from groups at the middle and bottom of the organization. Therefore, a systems perspective is adopted, "rather than just focusing on top management and its choices, at the edge of chaos one must look at the whole system and its leadership" (Osborn et al., 2002, p. 823).

Emergence and self-organization. Emergence and self-organization are considered by many academics and practitioners to be complexity theory's most important phenomena (Jennings & Dooley, 2007). Emergence, simply put, is the creation of order or the formation of new properties in complex systems. Emergence exemplifies the maxim: the whole is greater than the sum of its parts. In reference to change, emergence refers to a nonlinear, sudden occurrence that characterizes change in complex systems (Marion, 1999). In his book, *Generative Emergence: A New Discipline of Organizational, Entrepreneurial, and Social Innovation*, Lichtenstein (2014) notes that emergence is studied in every field, from physics to philosophy; he argues that emergence is one of the most ubiquitous processes in the world and yet one of the least understood. Borrowing from the work of Reynolds (1987), Lichtenstein (2014) provides an illustration of some of the key issues in emergence with the seemingly simple example of the emergent V-shape that is made by a flock of flying birds:

> The shape is emergent: it is not caused by any one bird's behavior, nor is there a leader in the flock. Instead, each bird individually is following simple rules that maximize its own efficiency in the group: (a) fly close together but avoid contact; (b) if you get too close, then separate; and (c) fly in the overall direction of the group. These rules, which guide the local interactions of each individual bird, also lead to an emergent structure—the V that we see in the sky—which increases the efficiency of all the birds in the group. The V is emergent because it is not caused by any one bird but by all the birds interacting together; the V is made up of all the birds but "transcends" them as well. In addition, the synergistic benefits allow the system much greater adaptability. (p. 1)

Innovation, creativity, and learning occur when emergence forms a previously unknown solution [new pattern] to a problem or creates new, unanticipated outcomes, also known as adaptive change (Uhl-Bien et al., 2007). The authors assert that adaptive processes are the source of creativity, adaptability, and learning in a complex system. According to Uhl-Bien et al. (2007), "Emergence involves two, interdependent mechanisms: (1) the reformulation of existing elements to produce outcomes that are qualitatively different from the original elements; and (2) self-organization" (p. 308). Nevertheless, Lichtenstein (2014) makes an important distinction between emergence and change, arguing that emergence is creation not simply change. He contends, "emergence is the invention of something new, the origination of a distinct system and/or the structures within it" (p. 8). The author reminds us that the V shape of the flock of birds is an emergent entity that is not the result of a change; although the birds change, their changing is not what generates the emergent V. He asserts that the V represents a creation; a "becoming" that was not there before its parts became interdependent (Lichtenstein, 2014).

A political protest group is an anthropological example of an emergent entity that represents a creation qualitatively different from its original elements. Simple rules dictate that individuals gather in one location and stand together to voice and act on dissent in a non-violent manner. The Women's March of 2017—a global phenomenon did not exist before its parts became interdependent through self-organization inspired by a specific attractor. As noted

above, these two examples illustrate Aristotle's maxim, "the whole is greater than the sum of its parts," a phenomenon that could not occur without interactive agents following simple rules.

Self-organization is the tendency of a complex system to generate new structures and patterns based on its own internal dynamics. A precursor to emergent outcomes, self-organization, as discussed in the previous section on dissipative structures, occurs when agents and resources reorganize—in response to a perturbation—into new patterns of behavior. Interestingly, Lichtenstein (2014) warns against over use of the term "self-organization" by scholars and practitioners, inferring that the process should be linked to rigorous science as opposed to its use as a metaphor for training and consulting. Therefore, he refrains entirely from use of this term in his book, relying instead on the constructs of emergence and dissipative structures to indicate the self-organization process (Lichtenstein, 2014). In contrast, Stevenson (2012) acknowledges that the self-organization concept "provides a useful metaphor for looking at social systems," while emphasizing "self-organization itself and the factors associated with it actually govern the way human social systems emerge, structure themselves, and behave" (p. 72). As an organization development practitioner who appreciates "rigorous science," I adopt a qualitative stance, beyond the bounds of a positivist epistemology, and concede the value and power of the self-organization metaphor in training, consulting, and scholarship.

In summary, the complexity constructs described in this section—complex adaptive systems, dissipative structures; butterfly effect; edge of chaos; emergence; and self-organization, transform the way we perceive and act on leadership in complex systems, moving us from the single-hero leader to a model that leverages shared leadership, dispersed intelligence, interactive dynamics, and whole systems thinking, as well as focusing on the rich interactivity of the

system's agents. The following section elucidates the critical role of human interaction in organizational systems and complexity processes.

Human Interaction in Complex Systems

Relationships, human interaction, and our interpretations lie at the heart of organizational systems. It is through social constructions of reality that we know the world. Therefore, to further inform the core discussion on leadership and change in today's complex organizations, the following section moves from key principles of complexity science to critical theories of human interaction. The discussion begins with social construction theory, and includes a brief review of social systems and social identity theory. Human cognition and the nature of sensemaking in organizations then provide a focal point of exploration for these constructs and their respective roles in the process of leading organizational change and transformation.

Social construction theory. Complex Adaptive Systems (CAS), as described previously, are built upon the interactions of their agents and are therefore dependent on human social constructions. Social constructionism describes these creations as being built on the rich connections and interdependencies of organizations and their members. Therefore, social reality is not separate from individuals but both are intimately interwoven and shaped by each other in everyday interactions (Bradbury & Lichtenstein, 2000; Uhl-Bien, 2006). Based on Berger and Luckman's (1966) perspective that knowledge is socially constructed and facts are social products, Cunliffe (2008) notes the main premise:

> Social realities and identities are created and maintained in conversations with others—rather than in structures—has been taken up by scholars in a number of disciplines, who have further developed the notion that social reality, identities and knowledge, are culturally, socially, historically and linguistically influenced. (p. 125)

Alongside this reasoning, Vallacher and Nowak (2007) caution us to remember that people do not respond in a reflexive way to the objective features of the world around them, but rather to their symbolic construction of reality:

> People are not atoms, sand grains, or neurons. Unlike the elements of physical systems, people have goals and plans, moments of self-reflection and sudden impulse, common concerns and idiosyncratic tendencies. One of the basic rules of human operation is the people can reflect on these rules and even attempt to override them. (p. 75)

From a complexity science perspective, Vallacher and Nowak's reference to the human response as a symbolic construction of reality, relates to the earlier discussion of Stacy's concept of bounded instability as a both stable and unstable third state of behavior residing at the edge of chaos, and to Osborn et al.'s (2002) reference to the power of human agency and bounded choice, or each agent's option to ignore or slightly alter the institutional arrangement.

According to CAS and complexity theory, constructionist approaches do not see relational processes as stable and linear. They view relationships as sensemaking processes involving tension, dynamism, contradiction, and flux. The notion of organizations as being socially constructed differs from the traditional systems theory perspective in that it sees the organizational environments, inputs, processes, and outputs as created, developed, and infused with meanings by organizational members. Senge (1994) would argue that systems thinking has helped us develop a new understanding of the organizational change process; not as top-down or bottom-up, but participative at all levels, and aligned through common understanding of a system.

A social construction perspective resonates with what we experience in organizations as we make sense of our activities and the actions of others. Essentially, relationally responsive social constructionism requires understanding how our assumptions and the use of words impact organizational practices as well as how they affect the social realities and identities of others

(Cunliffe, 2008). For many scholars and practitioners the social construction perspective fills in the missing elements of systems theory to provide a richer and more dynamic view of how organizations and societies function.

Social systems. According to Uhl-Bien et al. (2007), CAS emerge naturally in social systems. As in the nature of self-organization, a community or group forms its own identity and sense of purpose. Social systems are groups in relation to each other that demonstrate enduring patterns of behavior. Wheatley (2007) describes sensemaking within an identity framework, declaring that we create worlds based on the meaning we invest in the information we choose to notice. The author contends that all organizing occurs around an identity, once this identity is set in motion it becomes the sensemaking process of the organization. In other words, when deciding what to do, a system will refer back to its sense of self. A unifying theme of much of the work in change theory and human behavior by renowned social scientist Kurt Lewin is the view that "the group to which an individual belongs is the ground for his perceptions, his feelings, and his actions" (Allport, 1948, p. vii).

Stevenson (2012) notes that human social systems are by their very nature complex, while he underscores the importance of understanding complexity as essential to any real understanding of the nature of social systems. Referencing the role of social systems, Stacey (2003) asserts that organizational change is better understood as a socially constructed reality with negotiated power relationships. He argues that this way of understanding change is largely an identity question. Furthermore, Karp and Helgo (2009) suggest "when people find traces of identity issues (for instance roles, values, competencies, positions, tasks and the like) in the 'new,' which matches their own agenda or interests, they will slowly begin the process by relating and talking to one another" (p. 88). The authors contend that this manner of relating is

about finding meaning, as well as performing actions that will advance them as individuals or groups toward the "new." In an organization, commitment to creating a coherent sense of identity "is the clarity that frees people to contribute in creative and diverse ways" (Wheatley, 2007, p. 38). Stevenson and Hamilton (2001) describe all human social systems as complex adaptive systems and note the importance of "self-identity" (self-similarity) in the process of assimilating into community. In reference to identity and change, the authors argue that the real threat to organizational change is more than economic wellbeing and a job; the threat is to people's identities.

With direct implications for leading change in complex organizations, and as noted previously, Stevenson (2012) contends that the concept of self-organization provides a useful metaphor for looking at social systems, while arguing that self-organization itself governs the way human social systems emerge, structure themselves, and behave. To underscore the power of the process, he further declares that self-organization exists as an underlying force within all of us. Stacey (1996) agrees and further makes the case that social systems are complex adaptive systems in which agents may be individuals and groups interacting in co-evolving sensemaking and active contexts. Stevenson (2012) suggests that human characteristics only add to the potential complexity without changing the fundamental dynamics: "By tapping into that potential within the human system to learn and self-organize we open up the possibilities for effective change in behavior and the emergence of sustainable systems" (p. 80). In the following the author outlines what he believes to be the three requirements for humans to function well, and to generate self-organization and emergence, within complex social systems:

1. A strong identity (i.e., sense of self)—Identity based on how they see themselves in context with others and in reference to their intentions (i.e., a sense of purpose);
2. Trusting relationships—Humans need to be able to connect in a way that creates meaning. They must be in trusting relationships, where mutual respect and honesty

are present. These relationships must be authentic and not simply conjured up and organized to provide value for some and not for others;

3. Information sharing—Humans need to share stories in order to learn about themselves and each other. This information sharing provides the communicative bonding necessary to connect people and support personal growth and development. (Stevenson, 2012, pp. 74–75)

Linking cognition and sensemaking with complexity principles, Stevenson's three requirements constitute conditions for leaders to generate within the organizational environments or "containers" (the porous boundaries of self-organizing systems) having the capacity to facilitate what Olson and Eoyang (2001) refer to as "transforming exchanges" or the "connections across significant differences that create changes in the patterns around which the system organizes itself" (p. 14). In the following, the Google study, *Project Aristotle*, provides surprising results that highlight Stevenson's three requirements.

In 2012 Google began an initiative—code named Project Aristotle—to study hundreds of its teams to understand why some were high performers and other teams did poorly. Google, known for its skill at finding patterns, was confounded by its inability to find any strong patterns in the data; nothing that they found showed that a mix of specific personality types, or skills, or backgrounds made any difference. This unexpected result sent the team searching for a new path that eventually led them to research by psychologists and sociologists on what are known as "group norms." In a 2016 *New York Times* article, "What Google Learned From its Quest to Build the Perfect Team," author Charles Duhigg reported on the surprisingly simple results of the Google study:

1. Good teams are characterized by interpersonal trust and mutual respect that creates psychological safety.
2. The influence of group norms (the traditions, behavioral standards, and unwritten rules that govern how we function when we gather) on team performance is profound.

At the heart of Google's study was the finding that how people treat one another hugely influences group performance. They found that psychological safety, more than anything else was critical to high-functioning teams, and that innovation thrives when the leader creates norms that allow people to do the messy and unpredictable work that is required to innovate (Duhigg, 2016). Google's findings support Stevenson's three requirements: strong identity, trusting relationships, and information sharing; and one can argue that psychological safety plays a critical role in creating environments in complex systems where self-organization and emergence can thrive. I will stress that a critical element missing from Stevenson's (2012) requirements, but indirectly captured within the Google study's identification of "group norms," is leader influence. As established in the literature and noted in this work, leader influence plays a vital role in the creation of norms and demonstration of values that allow people to do the "messy and unpredictable work" that is required to innovate.

Self-similarity. Seemingly antithetical to the diversity known to foster organizational creativity and innovation within bounded instability and bounded choice as referenced earlier in this section, self-similarity fuels the reorganization process and aids in the creation of patterns. Schneider and Somers (2006) offer the following explanation:

> In a CAS, self-similarity is the common schemata shared by system sub-units. It is evidenced in the physical world in fractals such as fern leaves and broccoli, which are geometric spaces in which the parts exhibit the quality of the entity's whole. . . . in the organizational world, self-similarity is associated with organizational identity. (p. 357)

Schemata, referenced above, are structured clusters of concepts that can be used to represent objects, scenarios or sequences of events, or relations. They are mental representations employed by individuals to give information form and meaning. It is a term used to "describe the manner in which individuals and groups map their experience of the world, identifying both

its relevant aspects and how we are to understand them" (Bartunek, 1984, p. 355). Common schemata established through dialogue create behavioral patterns that form identity.

Bartunek (1984) proposes that major changes in interpretive schemes occur through dialectic processes in which old and new ways of understanding interact, resulting in a synthesis. In other words, it is through discourse that we develop and revise the mental models we use to help us make sense of our world. According to Barrett (1995) dialogue is an under-recognized element of the collaboration that is necessary to build shared meanings and collective pools of knowledge in an organization. Through discourse, individuals co-create and shape their social reality. The authors argue that it lies at the heart of the relationship building that fuels an organization's capacity to adapt and change. In the following, Barrett (1995) address the role of discourse in change:

> Discourse is the core of the change process. For it is through patterns of discourse that we form relational bonds with one another; that we create, transform, and maintain structure; and that we reinforce or challenge our beliefs. The very act of communicating is the process through which we constitute experience that gives organizational members a context for their organizing behavior. (p. 353)

The organizational identity or frame of reference that emerges from discourse encourages a healthy measure of self-similarity: "Self-organization succeeds when the system supports the independent activity of its members by giving them, quite literally, a strong "frame of reference" (Wheatley, 1994, p. 95). In the organizational world, as described by Wheatley (1994), self-similarity is associated with the organizational identity as developed, in part, by the organization's vision, mission, and values as demonstrated and espoused by organizational leaders. Wheatley (2007) points out that an organization's identity also "includes current interpretations of its history, present decisions and activities, and its sense of its future" (p. 38). Schneider and Somers (2006) understand the degree to which organizational-identity is shared by

members as critical to self-organization and adaptation. Linking adaptive capacity to identity, Barrett (1995) suggest that discourse patterns help to shape organizational identity, which, in turn, play a critical role in sensemaking and sense giving. It is therefore suggested, and important to note, that organizational identity can be the primary constraint on the organization's adaptive capacity (Schneider & Somers, 2006). However, organizational identity can also serve as an opportunity to enhance adaptive capacity, contingent upon the established identity.

Consider again Project Aristotle and Google's finding that group norms have a profound effect on team performance. As discussed throughout, the influence of complexity leadership plays a critical role in helping to facilitate discourse, define an organization's identity, and create positive, humanistic group norms as derived from leader influence in concert with the organization's (or team's) vision, values, and culture.

Social Identity Theory (SIT). Tunneling deeper into our comprehension of intergroup behavior, SIT is an important factor in the self-organization and emergence equation. Formulated by Henri Tajfel and John Turner in the 1970s and 1980s, SIT aids in the effort to understand and explain intergroup behavior; specifically how individuals form groups and how these groups can influence the perceptions and behaviors of the individuals within the groups (Tajfel & Turner, 1985). From the individual perspective, what we come to know about the social world and ourselves within it is determined by the properties of the people and events that we observe (Moskowitz, 2005). Such social classification enables the individual to locate or define himself or herself in the social environment. From a complexity leadership perspective, in social systems the group identification that initiates or plays a role in self-organization tends to occur even in the absence of strong leadership (Reicher & Haslam, 2012).

SIT predicts certain intergroup behaviors on the basis of perceived status differences, perceived group status differences, perceived legitimacy and stability of those status differences, and the perceived ability to move from one group to another (Ashforth & Mael, 1989). As a result, different social contexts may trigger an individual to think, feel, and act on basis of his personal, family, or national level of self (Turner, Hogg, Oakes, Reicher, & Wetherell, 1987). Therefore, in SIT, a person has not one personal self but multiple selves that correspond to widening circles of group membership. Originally developed to understand the psychological basis of intergroup discrimination, Turner (1985) positions social identity as "the cognitive mechanism that makes group behavior possible" (p. 21).

SIT asserts that group membership creates in-group self-categorization and enhancement in ways that favor the in-group. The theory suggests that a person defines him or herself according to a perception of oneness or belongingness to a group, which involves direct or vicarious experience of its successes and failures (Pye, 2012). The individual sees himself or herself partly in terms of salient group memberships, such as organizational membership, religious affiliation, gender, and age cohort (Ashforth & Mael, 1989; Tajfel & Turner, 1985). "Social identification, therefore, is the perception of oneness with or belongingness to some human aggregate" (Ashforth & Mael, 1989, p. 21). Through a simple process of social interaction, we categorize individuals (including ourselves) in order to understand the social environment.

While cautioning that SIT should not be taken as a fully developed change theory, Reicher and Haslam (2012) argue that SIT is a theory of social change in that it primarily deals with mobilizing groups through enabling them to reimagine their social identity. Fundamental to leadership and change in CAS, the authors describe this process as a series of interrelated

activities whereby leaders "collaborate with followers to consider 'who we are,' to create a vision of 'what we might become,' and to organize practical action that can turn vision into social reality" (Reicher & Haslam, 2012, p. 55). Furthermore, the authors contend that when people imagine an alternative social world, that is, a sense of somewhere different than where we exist, which is referred to as cognitive alternatives, it restructures their understanding of the social world and provides a platform for change. In the following quote Reicher and Haslam (2012) describe the processes by which power, vision, and structures constituting cognitive alternatives are realized via the complexity principles of emergence, interdependency, and enabling leadership:

> (a) To some extent, alternatives are not simply imposed from the outside but rather can be an emergent product of the intergroup dynamic itself. Thus, a sense of alternatives gradually develop out of the ways in which dominant groups respond to the challenges of subordinate groups…
> (b) The various elements involved in the development of a social change perspective should not be regarded as independent factors linked in a temporal and causal process. Rather the terms might be better understood as interdependent elements of an overall representation such that altering any one will have consequences for the others…
> (c) Leadership is a critical element in the development of cognitive alternatives. The leader must attend to all three of the elements of the construct—unifying group members and organizing structures to channel their social power as well as mobilizing a vision of the future. (p. 69)

As noted previously, sensemaking is an important construct in this research. The next section introduces the concept and defines its role in leader cognition, the understanding of context, and the act of leading change.

Leader Cognition and Sensemaking

Leading complex change is essentially a thinking, sensemaking, and sense-giving endeavor. It involves an attempt to change modes of cognition and action to enable an organization to continuously adapt, take advantage of important opportunities, and/or cope with environmental threats (Gioia & Chittipeddi, 1991). Initially, the act of leading change requires a

leader to fully understand his or her role within a specific context, while being aware of both the conscious and unconscious act of sensemaking and sense giving that occurs in the process of understanding and acting on environmental demands. Secondly, and as a function of sense giving, it is incumbent on organizational leaders to ensure all members understand the intended change in a way that makes sense, corresponds with the organization's identity, or fits into some revised interpretive schema or system of meaning.

In order to more fully comprehend how leaders understand their role in leading complex change and how they act in these endeavors to influence change initiation, application, and outcomes, I contend that it is essential to examine leader cognition, sensemaking, and sense giving in the change process. Notably, and of particular relevance to this narrative-based study of leading change, the concept of cognition and sensemaking has been increasingly used by researchers to understand and explain change management (Bartunek, 1984), and strategic change (Gioia & Chittipeddi, 1991; Gioia & Thomas, 1996). Mumford, Friedrich, Caughron, and Byrne (2007) emphasize that leadership is typically defined as social influence, thereby underscoring the role of leader cognition and sensemaking in the change process, as well as how managing change requires a consideration of the effects of change on the interpretive schemes of organization members (Bartunek, 1984).

Cognition and context. In a leader's effort to alter an organization's modes of cognition and action to effect change, it is important to explore and understand how leaders think about and make sense of the act of leading complex change. What is their cognitive process? How does the way a leader think about change impact his or her performance? What role does organizational context play? From a shared leadership perspective—as discussed throughout this section—how can we as scholars, practitioners, and organizational members support and/or

participate in the act of understanding and leading change? The following defines cognition, considers the role of context and explores these constructs from the perspective of leading complex change.

"Cognition, as a term, refers to a class of variables pertaining to how people work through or attempt to solve performance problems" (Mumford et al., 2007, p. 518). "Cognitive psychology has traditionally been a psychology of the individual, seeking to delineate the processes by which individual minds perceive, manipulate, and interpret information" (Levine, Resnik, & Higgins, 1993, p. 586). Throughout the 1940s, 1950s, and 1960s experimental social psychologists were focused on stimulus-response psychology. Increasingly, however, cognitive theories have begun to venture away from the individual focus as they seek to explain complex, real world forms of cognitive activity:

> Although cognitive psychology's increasing engagement with complex tasks has pressed the field toward a consideration of the context of problem solving as an important element of cognition, little attention has been paid to intentions, motivation, social interpretations, or cognitive functioning in interaction with others. (Levine et al., 1993, p. 586)

To further this social constructionist perspective, Styhre (2002) contends, "the cognitive sciences suggest that the world as it is experienced does not consist of events that are meaningful in themselves; rather, cognitions, interpretations, or ways of understanding are guided by organizing framework or schemata" (p. 484). As an organizing framework the term schemata, as noted previously, is often used in the cognition literature to mean a mental representation employed by individuals to give information form and meaning.

With their description of cognition as a collaborative process that produces cognitive products, Levine et al. (1993) hint at the complexity notions of self-organization and emergence found in CAS:

> Cognition is almost always collaborative. At work, in civic and in personal life, each person's ability to function successfully depends upon coordinated cognitive interactions with others, and the cognitive "products" that emerge from these interactions cannot be attributed to individuals. (p. 599)

As noted above, until recently the cognitive sciences have focused on the individual, considering interaction to be primarily a stimulus to private mental work (Levine et al., 1993). In *Social Foundations of Cognition,* Levine et al. (1993) document "the many ways the social and the cognitive interpenetrate and interact in human functioning" (p. 604). They conclude their review on this topic and what may lie ahead for the field of cognitive science: "The distinction between interaction that stimulates cognition and interaction that constitutes cognition may become less crisp as the field continues to develop" (p. 604).

The early work on developing leader cognition models originates from the individual focus in cognitive science. Mumford et al. (2007) note that attempts to develop models of leader cognition have reflected one of two general approaches: the first approach examines leader cognition as a general phenomenon attempting to explain how leaders think; the second applies a more domain specific approach attempting to examine how leaders think about certain issues or certain types of challenges. The latter approach has become dominant in studies of human cognition and has been used to explore how leaders think about crises or change events and the impact on leader performance.

Mumford et al. (2007) argue that the relationship between cognition and leader performance is to some extent contingent on the conditions of the task at hand. Similarly, Baer (2003) reasons that different problem domains will call for different types of cognition. He asserts that these differences in domain call for different models and imply differences in performance. This raises the question, what type of thinking will allow leaders to resolve crises or change events? Mumford et al. (2007) credit Weick with providing an answer:

> Weick (1995) argues that in addressing crises [change events] leaders play a central role through sensemaking. In sensemaking leaders create a structure, a cognitive structure, for understanding and responding to the high stakes change events broached by crisis [or change] situations. The articulation of this sensemaking system reduces stress, clarifies the causes and goals operating in the situation, and provides a basis for integrating actions among multiple parties. Thus the leader's cognitive product is not a problem solution per se but rather a cognitive model for understanding and responding to the change event under the time frame and conditions at hand. (p. 522)

Sensemaking via Karl Weick. Sensemaking, a process most clearly defined by Karl Weick (Weick, 1995; Weick et al., 2005), is how organizational members discover ways of understanding and making sense of their environments. Sensemaking is understood literally, not metaphorically, as making something sensible. According to Weick (1979), organizations can be understood as "networks of procedures, puzzles, interpretations, and behaviors that provide opportunities for sensemaking" (p. 4). Collective meaning is co-created through interacting with and observing others such as superiors, subordinates, and peers (Balogun, Bartunek, & Do, 2015). Thus, sensemaking is a social process that takes place in relational context. It is a process of social construction, whereby actors "interpret and explain the information that they receive in order to produce what appears to them to be a plausible account of the world to enable action" (Locket, Currie, Finn, Martin, & Waring, 2014, p. 1103).

Weick et al. (2005) view sensemaking as the site where meanings materialize that inform and constrain identity and action, thereby extracting meaning and providing a measure of order through the process. The authors characterize sensemaking as a social process of organizing:

> Sensemaking involves the ongoing retrospective development of plausible images that rationalize what people are doing. Viewed as a significant process of organizing, sensemaking unfolds as a sequence in which people concerned with identity in the social context of other actors engage ongoing circumstances from which they extract cues and make plausible sense retrospectively, while enacting more or less order into those ongoing circumstances. (Weick et al., p. 409)

The roots of sensemaking in the organizational literature can be traced back to the beginning of the 20th century (Dewey, 1922). Essentially, sensemaking is an epistemic need. Humans need to identify, to label, to understand, and to be able to make predictions about the people and objects in our world; it is a need to have meaning (Moskowitz, 2005). Various streams of research in the 1960s and 1970s provided rich ground for sensemaking that challenged notions of an objective reality and instead emphasized the social construction of reality (Berger & Luckmann, 1966). In their seminal work, *The Social Construction of Reality: A Treatise in the Sociology of Knowledge*, Berger and Luckmann (1966) open with the essence of their argument: "reality is socially constructed and the sociology of knowledge must analyze the processes in which this occurs" (p. 1).

In his seminal book, *Sensemaking in Organizations*, Karl Weick (1995) marked an important advance in sensemaking in the mid-1990s by summarizing the state of the research and deriving a theoretical framework for understanding core aspects of sensemaking. According to Weick, sensemaking is based on the idea that "reality is an on-going accomplishment that emerges from efforts to create order and make retrospective sense of what occurs" (p. 635). The author conceptualizes sensemaking as a cognitive social process that helps leaders process ambiguity and construct stability in an ever-changing reality (Weick, 1995; Weick et al., 2005). Steinbaurer, Rhew, and Chen (2015) expand on Weick's classic model with their introduction of a dual-systems model, offering unconscious sensemaking as a complementary process that supports conscious sensemaking. The authors posit that their dual model may better equip leaders to not only make sense but also give meaning (sense giving) and affect change. Because sensemaking is widely accepted as a key leadership skill (Steinbauer et al., 2015; Weick, 1995), the authors suggest that scholars, practitioners, and leaders ought to be cognizant of both a

conscious and unconscious approach to organizational sensemaking, as well as sense giving, thereby contributing to leaders' organizational success.

In the following segment leader cognition and sensemaking are illustrated through a discussion of leadership in the knowledge era, beginning with the current literature on complexity leadership, a discussion of the movement of traditional style leadership toward complexity approaches, and then moving to a review of complexity leadership theory and the role of the adaptive leader.

Complexity Leadership and the Modern Era

Uhl-Bien and Marion open their 2007 volume on complexity leadership with an introduction titled *Complexity Leadership: A Framework for the Twenty-First Century*. The authors begin by describing the swarm behavior of animals, or the smart behavior that occurs in nature without the benefit of centralized coordination. As one remembers Lichtenstein's example of the V-shape flock of birds, now consider fish, gazelles, and water buffaloes instantly moving in sync as though they were acting as a single unit. Uhl-Bien and Marion (2007) make the point that humans are predisposed to want to suppress the swarm dynamic, preferring centralization and control of the behaviors of the collective. In contrast, the authors suggest, "we should enable collective intelligence and informal dynamics in human organizations rather than suppress them" (p. xiii). They contend that complexity dynamics, and their emergent outcomes (e.g., adaptability, innovation, and learning) are critical for success in the highly complex world of the 21st century.

The literature. With heightened interest in complexity leadership, two special issues resulting from international conferences were published in leading academic journals in the past decade: Uhl-Bien and Marion (2007) *Complexity and Leadership* in the Leadership Quarterly,

and also, Goldstein and Hazy's (2008) *Editorial: Complexity and the Generation of Social Value* in Emergence: Complexity & Organization. In addition, two edited books in 2007: Hazy, Goldstein, and Lichtenstein, *Complex Systems Leadership Theory: New Perspectives From Complexity Science on Social and Organizational Effectiveness*, *Volume 1*, and, as previously noted, Uhl-Bien and Marion's *Complexity & Leadership, Volume I: Conceptual Foundations*. Numerous studies, articles, and books by scholars and practitioners have followed. However, in a review of the complexity leadership literature, Avolio, Walumbwa, and Weber (2009) concluded that the field still lacked substantive research:

> The complexity leadership field lacks substantive research. We suspect this is a result of the difficulties in assessing this type of emergent construct within a dynamically changing context. However, substantive research is needed if this area of leadership research is to advance beyond conceptual discussions. (p. 431)

This assertion appears similar to the criticism made by Rosenhead (1998), included in the introduction of this work, which assumed the need for a positivist approach to the study of complexity leadership. As Stacey et al. (2002) noted, and it is worth repeating here, the scientific method is not the only valid form of knowledge, especially when dealing with complex human dynamics.

From leader to leadership. Our models of leadership in the last century largely mirror top-down bureaucratic paradigms (Uhl-Bien et al., 2007). They are the traditional leadership theories reflecting the artifacts of the 20th-century industrial era and the production economy that dominated it (Rost, 1995; Uhl-Bien et al., 2007). In this paradigm there is an assumption of certainty derived from traditional bureaucratic notions of organizations in which the world is knowable, social systems are predictable, and organizational outcomes are deterministic of leader actions and follower responses (Plowman & Duchon, 2008). Whereas, in a complex, rapidly changing, global business environment the world is not knowable, social systems are

inherently unpredictable, and organizational outcomes are not directly deterministic from leader actions (Jennings & Dooley, 2007).

In Complex Adaptive Systems (CAS) leaders move from heroic positions of command-and-control to enablers of learning, creativity, and adaptive capacity in the context of self-organizing and emergent systems. Marion (2012) observes that an organization can best foster change if leadership is an enabling function rather than heroic personalities. As an example, the author references his research having "observed the tendency of managerial heroics to limit rather than expand the capacity of R&D departments to innovate in response to environmental complexities" (Marion, 2012, p. 26). Leadership is "becoming less about asserting control then about enabling adaptation; it is becoming less role-centric and more relation-centric; influence is no longer primarily direct and top-down, but indirect and multi-directional" (Jennings & Dooley, 2007, p. 22). In the following passage, Marion (2012) proposes and responds to the question "What is leadership in the context of complexity dynamics?"

> Complexity is an interinfluence process in which the ideas promoted by people and groups interact, combine, diverge, elaborate, and dissolve within mechanisms. This side of complexity does not suggest a role in which "leader" does something to the organization. Rather, this side suggests a process, a dynamic, something ongoing… It suggests leadership instead of leader. (p. 16)

At its core complexity leadership is an interinfluence process "grounded in the assumption that the collectivist actions of interactive agents and ideas are responsible for social and organizational outcomes" (Marion, 2012, p. 3). In contrast, traditional leadership theory is based on dramatically different assumptions defined by independent hero actions.

In *Complex Systems Leadership Theory*, edited by Hazy et al. (2007), Jennings and Dooley (2007) provide an overview of the complex systems leadership field, describing

Complex Systems Leadership Theory (CSLT) as a nascent leadership paradigm. The authors identify themes in this leadership domain, depicting CSLT as "an emerging paradigm that promises to make both the study and practice of leadership more effective by bridging the gap between conventional leadership theory and the complex realities between global organization and management" (Jennings & Dooley, 2007, p. 18). Of particular note in their review, the authors found a widely used definition of leadership as an emergent behavioral phenomenon that results from the relational interactions of agents in the system (Jennings & Dooley, 2007). Within the CSLT model, leadership as an emergent (and shared) phenomenon is sparked by tension caused by an adaptive challenge and results in an adaptive outcome in which the interactive dynamics of the CAS produce new patterns of behavior and new modes of operation (Jennings & Dooley, 2007; Lichtenstein et al., 2006; Marion & Uhl-Bien, 2001; Plowman et al., 2007).

Current literature suggests that scholars and practitioners increasingly recognize that leadership cannot be described as only the act of an individual (Marion & Uhl-Bien, 2001). According to Lichtenstein and Plowman (2009), complexity science reframes leadership by focusing on the dynamic interactions between individuals explaining how those interactions can, under certain conditions, produce emergent outcomes. Lichtenstein et al. (2006) further describe leadership as a complex dynamic process that emerges in the interactive spaces between people and ideas. The authors argue that "leadership is a dynamic that transcends the capabilities of individuals alone; it is the product of interaction, tension, and exchange rules governing changes in perception and understanding" (Lichtenstein et al., 2006, p. 2). Burns (2003) speaks of the mutually empowering interaction between leader and follower as a dynamic that leads to crucial change:

> The process is so complex and multidimensional, so fluid and transforming, that persons initially labeled "leaders" or "followers" come to succeed each other, merge with each other, substitute for each other. Leader and follower roles become ephemeral, transient, and even indistinct. . . . This view of empowerment does not diminish the role of leadership itself but rather enhances it. Leadership electrifies the system as followers become leaders and vice versa. (p. 185)

Burns (2003) goes on to say that to understand the whole process as a system—in which the function of leadership is central, but the actors move in and out of leader and follower roles—is the crucial point where we no longer see individual leaders; rather we see leadership as the "basic process of social change, of causation in a community, an organization, a nation—perhaps even the globe" (p. 185).

It is interesting to note here that throughout the leadership literature a transformational leadership style is commonly understood as being the most effective in leading change. Bass and Avolio (1996), for example, identified the main characteristics of transformational and transactional leadership as cited in Higgs (2002):

- Transformational leadership—charismatic/inspirational (inspiring and aligning others by providing a common purpose allied with optimism and the "mission" and its attainability); intellectual stimulation (encouraging individuals to challenge the status quo, to consider problems from new and unique perspectives and to be innovative and creative); and individualized consideration (a genuine concern for individuals' feelings, aspirations and development). They pay special attention to each individual's needs for achievement and growth, they coach and mentor. Followers are treated differently and equitably.

- Transactional leadership—contingent reward (encouraging specific performance and behaviors by making rewards (in the broadest sense) contingent on delivery; and management by exception (only intervening actively when a delegated task or function is failing to conform to expectations). (p. 276)

However, Plowman et al. (2007) challenge an important premise regarding the notion that transformation leadership is the most effective at implementing change. In their discussion of leadership in complex adaptive systems they state that transformational and transactional leadership styles are deemed to share common frameworks with the more traditional trait and

behavior theories of leadership; this commonality is based on the assumption that leaders are the prime actors who "actively create conditions to reach a well-articulated future state through planning, directing, organizing, and controlling" (Plowman et al., 2007, p. 344). The authors argue that these traditional frameworks are deterministic, top-down, and assume an equilibrium end-state not present in CAS.

Rost (1995) defines leadership in a complex system as not what leaders do but what leaders and collaborators do together. In *Relational Leadership Theory: Exploring the Social Processes of Leadership and Organizing*, Uhl-Bien (2006) expands on this notion, placing the concept in the emergent leadership domain by describing relational leadership as "human social constructions that emanate from the rich connections and interdependencies of organizations and their members" (p. 655). Uhl-Bien (2006) promotes the consideration of leadership as non-hierarchical and argues that investigating relational leadership would:

> Allow us to consider processes that are not just about the quality of the relationship [transformational] or even the type of relationship [transactional], but rather about the social dynamics by which leadership relationships form and evolve in the workplace. In this way, it moves leadership beyond a focus on simply getting alignment (and productivity) or a manager's view of what is productive, to a consideration of how leadership arises through the interactions and negotiation of social order among organizational members. (p. 672)

The question becomes whether the notion of complexity leadership is at odds with the majority of the leadership literature, or simply new information arising from complexity thinking? Perhaps complexity leadership absorbs transformational and transactional leadership and takes on new form? Do individuals actually lead organizations or is something else going on, such as a new form of leadership akin to collective agency (Hazy & Uhl-Bien, 2012)? In complexity theory the premise is clear, leading in the knowledge era is not about the heroic individual or that person's particular leadership style; rather, it is about creating an organizational environment that

expands the concept of the leader to primarily the enabling facilitator of an interconnected and shared leadership function. As Marion (2012) notes, it is not about the "leader," it is about "leadership."

In *Dispelling the Myths About Leadership: From Cybernetics to Emergence*, Plowman and Duchon (2007) present an emergent view of leadership based on complex adaptive systems that dismiss leadership myths (the domain of traditional leadership) and offers emergent realities (the domain of complexity leadership), as outlined in Table 2.2:

Table 2.2

Leadership Myths and Their Corresponding Realities

Leadership Myth	New Reality
1) Leaders specify desired futures.	Leaders provide linkages to emergent structures by enhancing connections among organizational members.
2) Leaders direct change.	Leaders try to make sense of patterns in small changes.
3) Leaders eliminate disorder and the gap between intentions and reality.	Leaders are destabilizers who encourage disequilibrium and disrupt existing patters of behaviors.
4) Leaders influence others to enact desired futures.	Leaders encourage processes that enable emergent order.

Complexity Leadership Theory (CLT): A contextual model. The work of Uhl-Bien and Marion—scholars considered to be at the at the forefront in the exploration of complexity leadership—effectively shifts the emphasis from the individual leader to the organizational process: "Complexity science broadens conceptualizations of leadership from perspectives that are heavily invested in psychology and social psychology (e.g., human relations models) to include processes for managing dynamic systems and interconnectivity" (Marion & Uhl-Bien,

2001, p. 389). Marion (2012) further describes complexity leadership as "a dynamic in which persons and groups introduce ideas into a discussion, foster learning initiatives in others, stimulate exploration of challenges, and initiate changes that lead to greater adaptability for the system" (p. 17). Specifically, Marion and Uhl-Bien (2009) argue that complexity theory focuses leadership efforts on behaviors that enable organizational effectiveness, introducing the idea of leaders as 'enablers' as opposed to determining or guiding effectiveness. In concert with Marion and Uhl-Bien, Plowman et al. (2007) argue that theories of leadership need to be revisited in light of complexity leadership theory. The authors support the notion of leaders as 'enablers' with empirical support through a qualitative case study that finds leaders enable rather than direct change.

Uhl-Bien and Marion (2009) contend that Complexity Leadership Theory (CLT) is a contextual theory of leadership that describes leadership as necessarily embedded in context and "socially constructed in and from context" (p. 632). The authors describe CLT as a change model of leadership that helps administrative leaders understand how to design robust, vibrant, adaptive organizations, and how to utilize an often untapped resource: the informal dynamics within the organization (Uhl-Bien & Marion, 2009), or what Shaw (1997) calls the shadow system. Stacey (1996) notes that every organization actually consists of two parts: the legitimate system and the shadow system. The distinction is noteworthy for leaders to make since it is the informal system that harbors the most in untapped resources and is known to produce creativity and innovation.

From a field perspective, in Jennings and Dooley's (2007) review of the complexity leadership literature they stress that an ongoing challenge for Complexity Leadership Systems Theory (CLST) is reconciling bureaucracy and complexity and integrating bottom-up

self-organizing concepts of emergence with top-down central-organizing concepts. The authors remind us that "the 21st century may be the era of complexity and emergence but the industrial era legacy of bureaucracy persists" (Jennings & Dooley, 2007, p. 27). In response to our bureaucratic legacy, Uhl-Bien et al. (2007) offer Complexity Leadership Theory (CLT) as a tool for organizations to use to address the challenge of effectively merging bureaucracy and complex systems. The authors present CLT as an effective model for enabling adaptive responses to challenges through network-based problem solving.

Within the last decade CLT has been recognized by many academics and practitioners as an influential body of thought, primarily through the work of Uhl-Bien and Marion among a growing group of scholars (Uhl-Bien & Marion, 2009). The leadership model offers tools for knowledge producing organizations dealing with complex problems and/or for complex systems seeking creativity (Uhl-Bien et al., 2007). CLT is a "a model that addresses the nature of leadership for enabling network dynamics, one whose epistemology is consistent with connective, distributed, dynamic, and contextual views of leadership" (Uhl-Bien et al., 2007, p. 302). In effect, CLT offers a leadership model for modern times that balances the need for learning, creativity, and adaptive capacity. The framework includes three intertwined leadership roles:

> In CLT, we recognize three broad types of leadership: (1) leadership grounded in traditional, bureaucratic notions of hierarchy, alignment and control (i.e., administrative leadership); (2) leadership that structures and enables conditions such that CAS are able to optimally address creative problem solving, adaptability, and learning (referring to what we will call, enabling leadership); and (3) leadership as a generative dynamic that underlies emergent change activities (what we will call, adaptive leadership). (Uhl-Bien et al., 2007, p. 299)

In this three-function model (a) bureaucratic leadership references the more traditional activities that seek business results for the organization; (b) adaptive leadership focuses on the

inter-influence dynamic by which change is actualized; and, finally (c) enabling leadership is a process that acts in the interface between administrative and adaptive leadership (Marion, 2012).

As noted in introductory section, Marion and Uhl-Bien (2001) feature prominently in the literature with their intention that leaders enable—rather than control—futures. Underlying this combination of administrative and enabling functions we find the generative dynamics of adaptive leadership that are fundamental to emergent change. According to the Uhl-Bien et al. (2007), CLT is an approach that redirects emphasis away from the individual leader. In their view, it is a framework that "seeks to foster CAS dynamics while at the same time enabling control structures appropriate for coordinating formal organizations and producing outcomes appropriate to the vision and mission of the system" (Uhl-Bien et al., 2007, p. 304). Uhl-Bien et al. address the traditional versus emergent leadership question by embracing the dual nature of complex systems. With the "administrative" function, CLT preserves the traditional bureaucratic leadership role and effectively merges this position with the enabling and adaptive functions of complexity leadership.

In "Complexity Leadership in Bureaucratic Forms of Organizing: A Meso Model," Uhl-Bien and Marion (2009) describe how adaptive dynamics can work in tandem with administrative (traditional) functions to generate emergence and change in organizations. The intent of complexity leadership is not to diminish the importance of leadership; rather, "it recognizes that leadership transcends the individual by being fundamentally a system phenomena" (Lichtenstein et al., 2006, p. 133). Similarly, Schreiber and Carley (2006) focus on leadership style and view CLT as the integration of formal leadership roles with complex functioning. In the following quote Lichtenstein et al. (2006) support the practical and managerial implications of complexity leadership theory:

> By focusing on how leadership may occur in any interaction, this new perspective dramatically expands the potential for creativity, influence, and positive change in an organization. More than simplistic notions of empowerment, this approach encourages all members to be leaders—to "own" their leadership within each interaction, potentially evoking a much broader array of responses from everyone in the organization. (p. 8)

Adaptive leadership. With the publication of his book, *Leadership Without Easy Answers,* Heifetz (1998) makes a significant contribution to the concept of complexity leadership and an organization's adaptive capacity. According to Heifetz, developing adaptive capacity is a goal that leaders must have in addressing complex, unpredictable, and dynamical situations. In this work the author rejects a singularly technical approach to management and embraces the dual concept of a complex system. Here, Heifetz introduces his theory of adaptive leadership, a people-based theory focused on how to build adaptive versus technical capacities in societies and organizations. According to Heifetz, adaptive leadership wrestles with the normative questions of value, purpose, and process. Essentially, it is a work about the change that enables the capacity to thrive. The author argues that leadership most commonly fails because leaders treat adaptive challenges—those involving changes in people's priorities, beliefs, habits, and loyalties—as if they were technical problems (Heifetz, 1998).

In 2009, with coauthors Grashow and Linsky, Heifetz followed the introduction of his theory with a practical, how-to guide, *The Practice of Adaptive Leadership: Tools and Tactics for Your Organization and the World,* aimed at implementing adaptive leadership. The authors describe adaptation in complexity terms, enabling a living system to take the best from its history into the future. In this book the authors identify adaptive leadership theory's relationship with systems theory and complex adaptive systems: "this work grows from efforts to understand in practical ways the relationship among leadership, adaptation, systems, and change, but also has

deep roots in scientific efforts to explain the evolution of human life" (Heifetz et al., 2009, p. 13).

Cynefin framework. To understand and address the important question of context (technical or adaptive) Heifetz's work is bolstered by Snowden and Boone's (2007) Cynefin framework (Cynefin, a Welsh word pronounced ku-nev-in). Snowden first developed the framework in 1999, based on concepts from knowledge management and organizational strategy. Along with his colleague Mary Boone, he extended the model to leadership, and it appeared as the cover feature in the *Harvard Business Review* in 2007 in the context of leadership. Defined by the nature of the relationship between cause and effect, the framework categorizes the issues facing leaders into four contexts: simple, complicated, complex, and chaotic. The framework posits that the external environment describes a continuum from ordered to unordered and aids in helping to visualize and understand how systems operate within a variety of domains. The model helps leaders to diagnose the organizational context or system domain by utilizing a continuum that moves from simply technical on one end to complete disorder at the other. Once the domain is identified the authors suggest that the appropriate leadership behavior will be evident (Snowden & Boone, 2007).

Table 2.3

Cynefin Framework Elements and Examples

Continuum Element	Example
Simple	Baking a cake
Complicated	Constructing a Boeing 747 airplane
Complex	Raising a child
Chaotic	A game of pin the tail on the donkey

In the following section I describe how scholars and practitioners have identified complexity science as a foundation for a new approach to managing organizations, and how we have begun applying concepts and ideas originating from complexity theories in the real world of organizations. The following includes brief descriptions of a selection of complexity-based tools and processes used in the effective application of complexity principles.

Leadership: A Humanistic Approach

In stark contrast to the command and control leadership style of the museum director introduced in the first section of this dissertation, and addressed throughout, complexity authors Birute Regine and Roger Lewin (2000) present a new perspective on leadership. In a narrative inquiry study of multiple organizations operating based on complexity principles, the authors describe complexity as the scientific foundation for a highly relational and deeply human approach to leadership. Their study supports research that shows human-oriented management practice consistently increases the economic performance of companies that follow it when compared with companies in the same sector that do not (Drucker, 1998; Higgs & Rowland, 2011; Pfeffer, 1998; Regine & Lewin, 2000). Regine and Lewin argue that, for the first time, a humanistic approach to leadership could be supported by science. They underscore the relevance of complexity-based management in the following description:

> A complexity science approach to management is relevant to modern business in a very direct way, for the following reasons. First, it views organizations not as machines but as complex adaptive systems, which is much more organic, and is much more in tune with the dynamics of the new economy. It therefore offers an opportunity for executive professionals and front-line people to work together in a different, more effective, adaptive, and creative manner, leading to business success. Secondly, … this form of management engenders a very human-oriented management practice and a workplace culture that strives toward genuine humanity and care, a place with the possibility of personal fulfillment in addition to business success. (Regine & Lewin, 2000, p. 53)

The authors claim that most leaders adopting a complexity based approach have discovered that "letting go of absolute control and nurturing the conditions for constructive self-organization can lead to astonishing creativity and adaptability, a robust financial bottom line, and a caring organizational culture" (Regine & Lewin, 2000, p. 53). This is not to say that a transition to a complexity leadership model is simple and easy to accomplish. Regine and Lewin (2000) describe the challenge of adopting and maintaining complexity leadership:

> The complexity-guided style of management is hard to do, very hard, especially for managers who seek safety in a command and control practice. It is hard even for those who embrace its principles, because everyday urgency of business can make time spent interacting and nurturing relationships seem like a waste of time, a distraction from tough business realities. It is hard because it requires constant attention, constant vigilance of one's own behavior and the behavior of others. (p. 57)

Complexity principles applied. Thomas Petzinger's book*, The New Pioneers: The Men and Women who are Transforming the Workplace and Marketplace* (1999), presents the successful change stories of small and medium-sized organizations that recognize that the command-and-control hierarchy of the 20th century is no longer responsive to the economic forces of the Information Age. The author, a *Wall Street Journal* business columnist, draws from corporate case studies of companies in more than 40 cities and 30 states. From a small pharmacy in an economically depressed neighborhood of Philadelphia, to a cinder-block furniture plant in rural Virginia, Petziner provides a compelling illustration of how the application of complexity principles make it possible to succeed and thrive in the highly volatile business environments of a new age.

Until recently there has been little published on the application of the principles of complexity science to real-world organizational challenges. Edwin Olson and Glenda Eoyang, known for their pioneering work around the application of complexity science principles in organizational practice, are among the first with the publication of their practical how-to guide,

Facilitating Organizational Change: Lessons From Complexity Science (2001). The book, including forwards by Richard Beckhard and Peter Vail, is the introduction to a series focused on the state of organizational development. The work, fashioned for change agents and organizational development professionals, is a presentation of complex adaptive systems made simple. It provides concepts, language, and practical tools grounded in complexity theory and a science-based organizing framework for many good models and concepts that have been in use for years. According to Olson and Eoyang (2001):

> As a powerful theoretical model, CAS provides an integrating context for the many innovative tools and techniques that are emerging from the various corners of the change-facilitation field. It meets the need for a model that is simple and complex, adaptable and stable, optimal for individual and organization, ambiguous and articulate, diverse and integrated, revolutionary and strangely familiar. (p. 20)

Other prominent scholars in this elite category include Margaret Wheatley, who authored, most notably, *Leadership and the New Science.* Brenda Zimmerman, Curt Lindberg, and Paul Plsek, published *Edgeware: Lessons From Complexity Science for Health Care Leaders*, an important work targeted at the healthcare industry but also valuable to change leaders in any field. Finally, *The Surprising Power of Liberating Structures: Simple Rules to Unleash a Culture of Innovation*, by Henri Lipmanowicz and Keith McCandless (as noted below), offers 33 complexity-based activities or adaptable microstructures providing innovative ways to organize and engage people—in complexity terms, to create the connectivity and dis-equilibrium that drives self-organization and emergence in Complex Adaptive Systems (CAS).

The late Brenda Zimmerman, considered a thought leader in the application of complexity theories to organizational practice, tells us that to understand a CAS is to comprehend how things work in the real world; that understanding of CAS provide a broader, more fundamental, potentially unifying framework for many aspects of good organizational

thinking from our past (Zimmerman, Lindberg, & Plsek, 2008). The authors describe the potential for new scientific management:

> Science can now say rather clearly that structure and control are great for simple machine-like situations; but things such as communication, diversity and so on are needed in complex adaptive systems—such as those in modern organizations. The new scientific management will, no doubt, revolutionize organizations in the coming decades much as the old scientific management changed the world in the early decades of the 20th century. (Zimmerman et al., 2008, p. 43)

Complexity methods and tools. The complexity-based, organizational constructs presented in the following are considered by many in the field to be valuable methods, tools, and processes for the implementation of complexity principles.

Organizational container. Based on the concept of self-similarity and analogous to Wheatley's frame and Cillier's boundry, as discussed earlier, Olson and Eoyang (2001) apply the concept to organizational behavior with their application of the term "container." The word, as used in this context, provides a valuable metaphor for the application of complexity principles (theory to practice) in organizations. Within an organization the container might represent the boundaries of a specific department, team, or special interest group. Cilliers (2001) cautions not to think of a boundary as that which separates one from another; instead, "we should think of a boundary as something that constitutes that which is bounded" (p. 241). He contends that this shift in thinking will help us to see the boundary as something enabling rather than confining.

In complex systems the container offers enabling boundaries and functions as a receptacle to hold and support conditions for self-organization and emergence, facilitating the process for creative problem solving, adaptability, and learning among self-similar groups. The container holds or contains the significant differences that lead to transforming exchanges, which Olson and Eoyang (2001) describe in their work in dealing with transformation that leads to new patterns of behavior. It is understanding and appreciating this notion of self-similarity,

self-organization, and emergence as cultivated by a boundary or container that is essential to a leader's ability to nurture an organization's adaptive capacity.

Simple rules. One of the early theories of complexity is that complex phenomena arise from simple rules. Note the order generated out of chaos with the behavior of a flock of birds as guided by three simple rules: (1) fly to the center of the flock; (2) match the speed of the other birds; and (3) avoid collisions (Reynolds, 1987). In the human sphere, consider the order and outcomes generated across the globe after the 2016 election of Donald Trump: (1) meet at a specific place and time; (2) express yourself peacefully. While the role of the leader as an enabler is critical in the change process, Lichtenstein (2000b) notes that "studies have shown that by giving a few simple rules to all components of a CAS, highly coherent collective behavior can emerge of its own accord, much more effectively than if the behavior could have been planned outside" (p. 139). Giving control to the system, he notes, increases the potential to create effective solutions to complex problems (Lichtenstein, 2000b).

As noted in the Edge of Chaos discussion above, the process of self-organization occurs within the operation of a limited number of simple-order generating rules that permit limited chaos while providing relative order (Burnes, 2005; Lichtenstein, 2014; Stacey et al., 2002; Wheatley, 1994). In the application of simple rules to organizations, Zimmerman et al. (2008) translate the concept into a complexity science-based principle with their "Build a good-enough vision" or "provide minimum specifications rather than trying to plan every little detail" (p. 26). The authors make the connection between a CAS and large-systems change, describing the behavior of a CAS as an interaction between agents that cannot be predicted. Zimmerman et al. (2008) suggest that leaders, organizations, and their change initiatives would be better served with practices that consist of "minimum specifications and general senses of direction, and then

allow appropriate autonomy for individuals to self-organize and adapt as time goes by" (p. 26). The principles of complexity science suggest that the most powerful change processes do not occur at the macro or strategic levels of an organization's system; rather, they occur at the micro level, where relationships, small experiments, and simple rules shape emerging patterns (Olson & Eoyang, 2001).

Liberating structures. In their book, Lipmanowicz and McCandless (2013) present a series of different micro-methods to stimulate critical conversations and "liberate" the potential of a group at any level of the organization. Liberating Structures are methods of group interaction, based on simple rules (as noted above) that provide an alternative to the ways organizations generally interact and work together, such as presentations, reports, and brainstorming sessions. According to Lipmanowicz and McCandless, liberating structures are new ways to organize and engage people. They are "adaptable microstructures that make it quick and simple for groups of people of any size to radically improve how they interact and work together" (Lipmanowicz & McCandless, 2013, p. 21). The authors contend that liberating structures promote bottom-up leadership and that experiencing these interactions changes the participants, their view of the organization, and their place within it (their knowledge structures or meaning-making systems). *Wicked questions*, presented below, is an example of a commonly used liberating structure.

Embracing paradox. Olson and Eoyang (2001) also reject the notion of control and predictability, advocating that today's organizations are required to deal with ever increasing complexity. The authors suggest that new ways of tapping into the self-organizing potential of people offers a more realistic way to lead and manage change in complex organizations. Wicked questions is a liberating structure that articulates the paradoxical challenges that a group must

confront. The activity is an effective way to expose an individual's or organization's assumptions in order to illuminate and address underlying issues of a complex challenge. Asking difficult questions is a provocative method that can lead to improvement and effective change in organizations (Olson & Eoyang, 2001). From a theory to practice application, the *edge of chaos* concept is embodied in the practice of asking challenging or wicked questions, recognizing that utilizing the tension found in bounded instability (as discussed previously) is a positive developmental practice for the organization. The authors contend that leaders should encourage and facilitate this tension in a semi-structured manner; whenever tension occurs creativity and innovation are likely to happen (Lipmanowicz & McCandless, 2013; Olson & Eoyang, 2001).

Large Group Interventions. Large Group Interventions (LGI) for organizational and community change are methods for involving the whole system, internal and external, in the process (Bunker & Alban, 1997, p. xv). As organizations struggle to keep pace with an increasingly complex world, the rapidly growing interest and literature on large-group methodology reflects the search for change theories, models, and tools that can meet these demands. LGI are based on the premise of mutual causality (versus linear causality), or the mutual influence in human interactions that impact both an organization's individual members and the system as a whole.

Organizations that use large-group change methodology today seek to align the entire organization around a strategic direction, work redesign, and system-wide issues. They assume many variables need to be evaluated via continuous, small experimentation; in addition, they believe the sum of the parts is greater than the whole, and that causality is mutual. Essentially, they are working from an assumption that people in that organization possess untapped talent and

creativity that can be applied to the organization's goals (Bunker & Alban, 1997; Olson & Eoyang, 2001; Purser & Griffin, 2008).

Though scantly recognized in the literature, large-group interventions are introduced in this review as a means to facilitate organizational change from a complexity science perspective. In contrast to the dominant theories of organizational change—many of 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). As noted by Arena (2009), "While complexity theory has received growing attention as an emerging direction in organizational change, 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" (p. 50). Analogous to the notion emphasized by Arena (2003, 2009) in two of his publications, large-group interventions are steeped in complexity principles.

Leading Change: A New Approach

As discussed throughout this section, historically, practitioner approaches to change have followed a linear, command-and-control perspective based on the assumption that telling employee groups what is required, according to a set plan, is sufficient enough to achieve action. Organizational leaders and practitioners have mostly relied on prescriptions that follow a sequence of steps or stages that emphasize rational planning and analysis The dominant assumption in these models is that leaders have the capability and control to achieve rational adaptation to environmental demands for change (Barrett, 1995). Based on an understanding of today's increasingly complex environments many scholars and change leaders are beginning to acknowledge the need to reconsider these assumptions and re-conceptualize the change process.

As a new organizational paradigm, complexity science is changing the way many academics and practitioners approach leading change in complex organizations. From the scholar and practitioner perspectives, by integrating complexity theory with organization change disruptive, fluid processes of change may be better understood and managed. Notions of non-linearity and complexity may then be effectively integrated into the analysis of organizational change processes (Styhre, 2002). Barrett (1995) attempt to integrate complexity through their "reconceptualization of the change process from a rational planning perspective to an interpretive perspective emphasizing the social construction of meaning" (p. 352). The author argues that the interpretive perspective that focuses on "how organizations are created, sustained, and transformed through discourse offers particular insights as to the pervasiveness and complexity of change" (p. 353).

Throughout the 20th and into the 21st centuries a Weberian logic prevailed with respect to leading complex change. The conventional wisdom was that organizational change was an incremental, linear process. Organizations undergoing change were understood as systems tending toward states of stable equilibrium, and leaders pursuing change initiatives did so from a hierarchical, command-and-control perspective, employing a carefully planned and predictable process. This prevailing view encompassed assumptions that change, because of its linearity, was a relatively straightforward affair and that it should be driven from the top of the organization and be implemented uniformly according to a detailed change plan (Lauser, 2010). For the purposes of this work, complexity theory and its implications for leading organizational change can be approached primarily from the perspective of a loosely coupled framework of theories and models that do not assume that social or natural systems operate in accordance with

linearity, and where self-organizing agents demonstrate the ability to organize into systems of relationships that increase organizational capacity (Karp & Helgo, 2009; Styhre, 2002).

Though the actual rates of failed change noted in the literature are now a matter of some debate (Burnes, 2011; Hughes 2011), there is a consensus in the field that change initiatives typically fail, not for technical reasons, but because leaders do not understand or have the skills to support people through change and transition efforts. Karp and Helgo (2009) argue, and Heifetz (1998) would agree, that change efforts fail because leaders do not understand the complexities of the process. The authors contend that managing people amid chaos and complexity is the main challenge facing organizations, and that leading people in chaotic change is a way of "influencing patterns of human interaction" (Karp & Helgo, 2009, p. 81). Specifically, with regard to change in public service organizations and perhaps a fundamental concept to understanding and facilitating human transitions, Karp and Helgo (2008) assert "change management effectiveness is low because leaders underestimate the complexity of change, focusing on tools, strategy and structures instead of paying attention to how human beings change by forming identities through relating" (p. 85). Similarly, Marion (2012) argues that the biggest hurdle for change practitioners relates to what he refers to as "complexity collectivism issues" that is, "leaders need to understand their organizations in terms of groups more than as entity processes" (p. 24).

Today, there are a growing number of scholars, practitioners, and leaders who recognize change as a key driver of organizational success and largely reject the traditional Weberian logic. This includes an evolving body of literature that reflects interest and exploration from academics and practitioners in change practice and methods, and increasingly in the art of leading change effectively (Gilley, Gilley, & McMillan, 2009). Scholars and practitioners are largely in

agreement—organizations are most competitive when they support and implement continuous and transformational change (Cohen, 1999). With a growing realization that change is a complex process and that such phenomena do not lend themselves to linear and predictive models, more recent research has considered the emerging field of complexity theory and the associated development of the new sciences as a source of understanding and leading change (Higgs & Rowland, 2005).

Change and the role of context. In a review of leadership studies over the last half-century Lord and Dinh (2014) acknowledge a shift from the machine era to the information age and underscore the importance of context. The authors note that leadership research has "transitioned from views that understand leadership perception, behavior, and effectiveness as outcomes of static processes to views that embrace the importance of context, social dynamics, and as factors that continually impact the construction of leadership by both leaders and followers" (p. 161). In their review the authors demonstrate that leadership perception or interventions may differ in various contexts. Scholars Kramer and Shuffler (2015) approach the question of context from a cultural values perspective with the following example of contextual influence:

> Consider New York City after the terrorist attacks on 9/1 Soon after the attacks, the entire city transformed from one of the most individualistic cities in the United States to being extremely collectivist. Numerous individuals helped one another and were looking out for the best interest of the community, even if it meant supporting political leaders whose views they may not have previously supported. (p. 200)

Scholars Armenakis and Harris (2009) note the importance of context specifically to organizational change. In a summary of their research and practice over 30 years, the authors found that the success of an organizational change effort can be significantly influenced by the internal context (organizational conditions that influence beliefs, attitudes, intentions, and

behaviors). The authors cite Damanpour's (1991) meta-analysis revealing the influential role of internal contextual variables on organizational change, and Johns' (2001) argument that an unfavorable organizational context can negate a well-executed change process (Armenakis & Harris, 2009).

From the complexity leadership perspective, leadership is viewed as both a position of authority (leader) and as an emergent interactive dynamic (distributed leadership) embedded in *context.* As construed from the literature and cited by Uhl-Bien et al. (2007):

> Context in complex adaptive systems is not an antecedent, mediator, or moderator variable; rather, it is the ambiance that spawns a given system's dynamic persona—in the case of complex system persona, it refers to the nature of interactions and interdependencies among agents (people, ideas, etc.), hierarchical divisions, organizations, and environments. CAS and leadership are socially constructed in and from context—a context in which patterns over time must be considered and where history matters. (p. 300)

In addition to the organizational context that influences agents in complex systems, there are also a diverse range of change contexts that leaders must consider, evaluate, and make meaning of in order to engage an effective course of action. In a review of the change literature Dulewicz and Higgs (2003) note this range and identify the following key contextual variables (as cited in Higgs & Rowland. 2005):

1. Magnitude and scale of the change;
2. Source of change (i.e., internal or external);
3. Impact of the change on those in the business; and
4. Timescales and speed of change. (p. 108)

The authors suggest that the change context should be considered in terms of volatility and complexity, and as a continuum rather than as a bipolar variable (Higgs & Rowland, 2005).

In summary, leading complex change is an interactive, emergent dynamic heavily influenced by external and internal contexts. As noted earlier, change happens within the context of social systems as a product of social interaction and the individual and organizational

constructions of reality that occur in the process of individual and organizational sensemaking. For leaders to effect change at the higher levels of an organization, as in policies and systems, they must take into account the organizational change context while they make sense of and influence social interaction at the micro level or between individuals.

Linear versus complexity approaches to change. The change literature suggests that if organizations are complex systems, management and change take on new dimensions. The self-organizing principle of CAS explicitly rejects cause and effect, top-down, command-and-control styles of management. According to the complex approach to change, managers will need to encourage experimentation and divergent views and recognize that "people need the freedom to own their own power, think innovatively, and operate in new patterns" (Higgs & Rowland, 2005, p. 122). Using a case study, mixed methodology analysis Higgs and Rowland (2005) conclude that change approaches based on assumptions of linearity were unsuccessful, whereas those built on assumptions of complexity were more successful. Higgs and Rowland (2011) argue that leaders working on change implementation need to recognize that they act within a complex organizational system.

In recent studies many authors have compared and contrasted traditional episodic approaches to leading change with more dynamic and continuous models that have emerged from thinking around complexity and complex adaptive systems. In accordance with much of the leadership and change literature, and based on an their exploration of leadership approaches to change, Higgs and Rowland (2005) argue that the root cause of many problems is leadership behavior. Moreover, the authors' research indicates that leader-centric behavior, "entailing the leader driving the change through personal involvement, persuasion and influence, did not

appear to be related to success in any of the contexts" (p. 133). In fact, the results of this study indicate "the impact of such behavior appeared to mitigate against success" (p. 133).

Further, Higgs and Rowland (2011) found "leaders' 'blindness' to organizational systems and/or a focus on their own ego needs led them into a range of 'traps' that seriously damaged the success of change interventions" (p. 369). This finding points to a pattern that emerged through a wide-ranging review of the leadership literature conducted by Higgs and Rowland (2000). The author found a clear pattern indicating, "the personality of the leader is determinant of their success" (Dulewicz & Higgs, 2003, p. 1). Dulewicz and Higgs (2003) argue that the way in which the skills and competencies of a leader are exercised is the function of his or her underlying personality. According to the authors, this was implied by Goffee and Jones (2000) with their statement that effective leadership requires "being yourself, with skill."

The debate between planned and emergent approaches to change is not without controversy. Burnes (2004a) tells us that that over the past 20 years the emergent (complex) approach to change has superseded the planned (linear) approach as the most effective. Yet, he contends that "the idea that planned and emergent changes are competing approaches, rather than complementary, is contestable" (Burnes, 2004a, p. 886). In his 2004 longitudinal study, the leader had a comprehensive understanding of the organization's context and effectively used both an emergent (complex) change approach for cultural transformation, and a planned (linear) approach for a structural transformation.

Results of the study by Voet (2013) support Burnes' finding that bureaucratic organizations were effective with both planned and emergent change approaches. Perhaps in deference to this debate, noted complexity scholars (Anderson, 1999; Burnes, 2005; Eoyang, 2009; Higgs & Rowland, 2005) contend that complexity represents a model of organizations that

includes both the structure and predictability of Newtonian methods, the flexibility that comes from a complexity-based perspective, and an understanding of the leadership role required in a complexity-based world. In the complexity change approach model dual paradigms of linear predictability and complexity adaptation co-exist (Eoyang, 2009). According to Anderson (1999), and in alignment with Burnes (2005) and Uhl-Bien et al. (2007), CAS models and ordinary causal (linear) models are complements, not adversaries.

Change: Lewin and complexity theories. In support of the proposition that linear and emergent change models are complements and not adversaries, Burnes outlines their common ground in a seminal work on the important contributions of Social Scientist Kurt Lewin, in his 2004b article "Kurt Lewin and Complexity Theories: Back to the Future?" The author maintains that much of our current thinking around change and transition can be traced back to Lewin's (1951) body of work on change theory, and his seemingly simplistic three phase model: unfreeze (the present), change (new state), refreeze (stabilize).

According to Burnes (2004b), in spite of Lewin's important contributions to early change theory, in recent times some have perceived his work to be simplistic and outdated. The author provides the following quote to illustrate his point:

> Lewin's model was a simple one, with organizational change involving three stages: unfreezing, changing, and refreezing… This quaintly linear and static conception—the organization as an ice cube—is so wildly inappropriate that it is difficult to see why it has not only survived but prospered. (Kanter et al., 1992, as cited in Burnes, 2004b, p. 301)

Burnes (2004b) suggests that Lewin's Field Theory, Group Dynamics, Action Research, and 3-Step model are most often seen in isolation, whereas the author meant them to be seen as a unified whole, with all of them necessary to bring about planned change. Consequently, he demonstrates that Lewin's rigorous and insightful approach to change is linked to complexity theory, and, therefore, stands as a forerunner to a complexity-based change approach. Burnes

(2004b) argues that Lewin's work shares considerable common ground with those seeking to apply complexity theories to organizations. In accordance with Burnes, other scholars point to the similarities of Lewin's work to that of complexity theorists (Back, 1992; Elrod & Tippett, 2002; Kippenberger, 1998; MacIntosh & Maclean, 2001). Burnes (2004b) makes a cogent case that there is common ground between Lewin's Planned approach to change and the emergent, complexity approach that "can fruitfully be built upon" (p. 309).

To understand the authors message one need only comprehend and compare the four elements of Lewin's planned approach to change to complexity-based principles employed by those seeking to apply complexity theories to organizations. Burnes (2004b) illustrates the similarities between Lewin's planned approach and a complexity approach by demonstrating the close link between the following three complexity principles:

1. Much greater democracy and power equalization in all aspects of organizational life;
2. Continuous change based on self-organization at the team/group level;
3. Order generating "simple" rules that have the potential to overcome the limitations of rational, linear, top-down, strategy-driven approaches to change. (p. 318)

Conclusion

At the heart of this review of the literature lies the notion that complexity theories, in particular complexity leadership theory, may offer leaders a path away from the traditional leadership paradigm—a model of heroism constructed over centuries and preserved during the industrial era—into a form of distributed leadership poised to embrace change, weather turbulence, and succeed in today's rapid-paced and richly interconnected organizational environments.

The six sections presented here were designed as a foundation for the exploration of this narrative study; that is, to explore leader thinking, sensemaking, and behavior in the process of leading complex change employing a complexity framework, and within the environment of Complex Adaptive Systems (CAS). Ultimately, the intent of this review is to provide a cogent understanding of germane theories, models, and tools that may serve as fertile ground for gaining insight from a sampling of prominent leaders and their change stories.

This section summarizes the arrival of complexity science into the social sciences, which is characterized as a new paradigm that is facilitating the transition from a mechanistic age to the modern "connective era." With his insistence that a paradigm shift was a "mélange of sociology, enthusiasm and scientific promise, but not a logically determinate procedure," Thomas Kuhn (1962) paved the way for our understanding of this transformation. It was called a new science and our world's new social paradigm by Fritjof Capra (1996), a new paradigm that rivals Darwin's theory of evolution, by Stuart Kauffman (1995), the century's third great revolution in the physical sciences, alongside relativity and quantum mechanics, by James Gleik (1987), and as a new scientific management that is destined to revolutionize organizations in the coming decades, by Brenda Zimmerman (Zimmerman et al., 2008). Complexity science provides a lens through which we can view and understand a rapidly changing world and the dramatically transformed organizational environments this "paradigm shift" has produced. Wheatley (2006) aptly concludes that our world-view must change, and that only with a dramatic shift in the way we think about the world can we respond wisely.

A reoccurring theme throughout the literature included here is the move from the concept of singular leaders in heroic, command-and-control positions (leadership of the industrial era) to enablers of learning, creativity, and adaptive capacity in the context of dynamical systems

(leadership of the information age). Throughout the literature, complexity leadership theory clearly emerges as a change model that helps leaders understand how to design adaptive organizations and leverage informal organizational dynamics.

With consensus among leading complexity scholars, the definition of leadership moves from influence and control to relation building and enabling. In the literature the term complexity leadership embodies elements of multiple leadership approaches such as transformational and transactional leadership styles. However, it is clear in the reading that complexity leadership differs in that, at its essence, it is a shared approach that does not presume control or the ability to predict outcomes. Complexity leadership theory constitutes the emergence of a change model of leadership that helps leaders understand how to design adaptive organizations and leverage the informal organizational dynamics. In short, through the contents of the literature included here we are persuaded that leaders must learn to behave differently than in the past in order to successfully lead change in complex adaptive systems. This notion lies at the heart of this study.

Methodology

The Leader Perspective

Leadership is increasingly recognized as a critical issue for organizations facing change in complex environments. Consequently, there is surging interest in the role of leaders in a change context. Irrespective of the recent swell of attention, the literature reveals that the role and behaviors of leaders during change is an area lacking in empirical research (Eisenbach, Watson, & Pillai, 1999; Higgs & Rowland, 2005; Rowland & Higgs, 2008). Equally perplexing is the realization that leaders' perspectives and the rich experiences embedded within their stories remain largely silent in the literature. To address this apparent gap, and gain insight on leading change in complex systems, this study concentrated on a narrative of stories from multiple and diverse leader perspectives. In the course of this research, I conducted, recorded, and analyzed interviews with 21 diverse leaders of complex change within a variety of organizations from the public and private sectors.

With particular interest in leader perceptions, behavior, and influence during change implementation, this qualitative study considers the compelling questions that surface within discourse. Specifically, the focus is on the extent to which many leaders understand the significance of their role, how leaders interact, and leaders' behaviors likely to optimize success in change endeavors. Questions at the heart of this study included the following:

1. How do leaders make meaning of complex change and change behaviors?
2. How do leaders perceive their roles in the change process?
3. How do leaders' values manifest themselves during change?
4. What do leaders actually do in relation to change and why do they do it?

5. How does the organization's internal and external context influence leader sensemaking, sense giving, and the resultant behavior? As related to context, what is the influence of social interaction and temporality?
6. How do leaders' personalities influence the change approach, process, and interaction in their respective organizations?
7. What are the leaders' criteria for change success?
8. What is the level and degree of leader involvement in the organization's major change initiatives?

Specifically, from the leaders' points of view and through their individual stories, this research explores leaders' perceptions of their roles and their sensemaking of the significant events that occur in the implementation and execution of significant change in complex adaptive systems. The focus here was not on the change events themselves; rather, attention was on leaders' interpretations and the stories they create about these events. The goal with this study was to explore a more accurate placement and nuanced understanding of leadership and leader influence within complex change in today's dynamic organizational environments.

Narrative Inquiry

Narrative inquiry is a qualitative methodology that takes various forms and is used in diverse ways; therefore, it is understandable that scholars and practitioners tend to disagree on its precise definition. Nevertheless, there is some agreement with the following description from Clandinin and Connelly (2000):

> People shape their daily lives by stories of who they and others are as they interpret their past in terms of these stories. Story, in the current idiom, is a portal through which a person enters the world by which their experience of the world is interpreted and made personally meaningful. Narrative inquiry, the study of experience as story, then, is first and foremost a way of thinking about experience. Narrative inquiry as methodology

> entails a view of the phenomenon. To use narrative inquiry is to adopt a particular view of experience as phenomenon under study. (p. 375)

As noted above, and presented in this study, the aforementioned scholars define narrative inquiry research as a way of understanding experience through story (Clandinin & Connelly, 2000). Similarly, Bamberg (2012) describes narrative as a form or genre of presentation organized in story form. Patton (2002) makes the connection between story and meaning with his assertion that "the central idea of the narrative analysis is that stories and narratives offer especially translucent windows into cultural and social meanings" (p. 116).

Stories are a fundamental way through which meaning is expressed. They reveal temporal, social, and situational context, as well as individual and cultural values, and emerging understanding. Befitting the focus of narrative inquiry, stories provide coherence and continuity to one's experience and have a central role in our communication with others (Lieblich, Tuval-Mashiach, & Zibler, 1998). In short, people are storytellers by nature and narrative inquiry taps into a rich and readily available medium. By pointing to the natural human gravitation toward narrative for the purpose of relating experience, Bruner (1991) underscores the role and value of story: "just as our experience of the natural world tends to imitate the categories of familiar science, so our experience of human affairs comes to take the form of the narratives we use in telling about them" (p. 4).

In contrast to quantitative research—and consistent with the tenets of complexity science—narrative inquiry does not seek prediction and control; rather, narrative researchers engage in exploratory forays within lived experience as they seek to understand the phenomenon of interest. Narrative offers the potential to address ambiguity, uncertainty, complexity and dynamism of individual, group, and organizational phenomena (Riessman, 1993). Consequently,

the use of narrative methodology results in unique and rich data that cannot be obtained from experiments, questionnaires, or observations (Lieblich et al., 1998).

In relation to qualitative research, narrative inquiry appears as a highly nuanced approach that allows access to implicit knowledge and informal means of understanding in organizations; it is a research methodology poised to tap into what Shaw (1997) and Stacey (1996) refer to as the robust world of the "shadow organization." Furthermore, it is a method that appears equipped to overcome the shortcomings of more traditional, positivist research in its ability to capture the rich nature of experience. Citing Facebook as an example of a massive epic narrative, Daiute (2014) brings a contemporary perspective to narrative inquiry describing the "dynamic narrative approach" as well suited to research in a variety of settings, including situations of practice, diversity, and in changing times and places. She refers to dynamic narrating as a theory and practice "researchers can use to learn from meaning-making processes that people use every day" (p. 3).

Dauite (2014) differentiates narrative inquiry by observing that grounded theory, for example, might focus on a topic (like failed change), characters, conflicts and reactions to create categories of social relations. The author notes this approach as valuable and part of narrative inquiry: "nevertheless, because human development is a dynamic sociocultural process, reducing discourse to the individual or to an identity group could minimize the interaction of an individual in constant interaction with diverse others and the individual in diverse situations" (Daiute, 2014, p. 12). Narrative inquiry is a uniquely human-focused methodology that embraces people, in all of their complexity, as living storied lives on storied landscapes (Clandinin & Connelly, 2000). If the foundation of social science inquiry is truly to understand and make meaning of experience, then narrative inquiry, and its use of story, is ideally suited as a potentially powerful

social science research methodology. Though narrative inquiry is most often used to study life stories, the methodology has become increasingly used in diverse and innovative ways.

Participant and researcher. In social constructionism, or the creation of reality as a product of human interaction, narratives are dependent on the context and constructed between the teller and the listener; they are not intended to represent "truth" (Hunter, 2009). The overarching intent of the research analysis will not be to seek 'truth' but, rather, to represent participants' narratives in a coherent and meaningful way. According to Clandinin and Connelly (2000), narrative inquirers work within the research space not only with participants but also with the inquirers themselves. By this the authors suggest that narrative inquiry is a space whereby we become visible with our own lived and told stories, and that our own unnamed stories come to light as much as do those of our participants. They argue that, "it is impossible, or deliberately self-deceptive, as a researcher to stay silent or to present a kind of perfect, idealized inquiring, moralizing self" (Clandinin & Connelly, 2000, p. 62).

Background. Narrative Inquiry is a multidisciplinary form of qualitative research, an extension of the interpretive approaches in social sciences, with intellectual roots in the humanities and other fields under the broad heading of "narratology" (Clandinin & Connelly (2000). Narratology is a term coined by Todorov in 1969 in an effort to elevate the form into a new legitimate scientific study (Riessman, 1993). The term emerged along with structuralism in literary criticism and it referred to the development of narrative methodology as an extension of literary theory, or arising from narrative theory, an extension of ethnography, or even as developing out of psychoanalysis (Mitchel & Egudo, 2003).

Narrative inquiry, as described by Riessman (1993), is a series of transformations involving telling, listening, transcribing, analyzing, and reading. She contends that the

methodology is no longer the province of literary study, referring to the shift from positivist approaches as a "narrative turn" in the human sciences embraced by history, anthropology, folklore, psychology, sociology and in professions like law, medicine, psychiatry, social work, and education. Similarly, in their 1998 publication on the topic, Lieblich et al. (1998) conclude that the use of narrative in research had grown significantly in the past 15 years. They enthusiastically go on to say that "in the fields of psychology, gender studies, education, anthropology, sociology, linguistics, law, and history narrative studies are flourishing as a means of understanding the personal identity, lifestyle, culture, and historical world of the narrator" (p. 3). Today, some 33 years after the authors' publication, many scholars describe the use of narrative inquiry in Kuhnian terms as a "paradigm shift," or as a "narrative revolution" made possible by the decline of the formerly dominant positivist paradigm in social science (Clandinin & Connelly, 2000).

According to Kim (2016) the use of narrative inquiry has become widespread in multiple disciplines, to include its establishment in organizations in the early 1990s. In an overview of the method's use Kim found that:

> By juxtaposing narrative inquiry at work in different disciplines (e.g., psychology, law, medicine, and education), we can see the ways thinkers in each arena have turned to narrative and stories to better inform their fields after realizing the limitations of positivistic inquiry. (p. 243)

Broadly speaking, this "narrative revolution," or "narrative turn," appears to have occurred in parallel with, and is surely related to, the shift in world-view fashioned by a move away from a scientific, positivist paradigm to a world understood in terms of its rich interconnections and lush complexity known as the *Knowledge Era.*

Narrative Inquiry Within a Complexity Framework

A traditional research approach has a reductionist structure derived from a scientific paradigm typically containing a research problem that expresses linear qualities of clear definability and the expectation of solutions. In contrast, narrative inquiry is well suited to a complexity-based framework for its decidedly non-linear approach, invoking more of a search, "re-search," or searching again (Clandinin & Connelly, 2000). As found in a complexity paradigm, it embodies more small experimentation and continual reformulation of the inquiry than it does a linear sense of problem, definition, and solution. Noted cultural anthropologist Mary Catherine Bateson (1994) makes the connection between the role of story and metaphor to construct patterns and emergence in complexity theory:

> Wherever the story comes from, whether it is a familiar myth or a private memory, the retelling of a story exemplifies the making of a connection from one pattern to another: a potential translation in which narrative becomes parable and the once upon a time comes to stand for some renascent truth. This approach applies to all the incidents of everyday life: the phrase in the newspaper, the endearing or infuriating game of a toddler, the misunderstanding at the office. Our species thinks in metaphors and learns through stories. (as cited in Hoyt, 2000, p. 2)

Bateson's truism on metaphor and story is clearly reflected within organizational life, playing a central role as a means for people to connect, create shared experience, and develop organizational identity. Therefore, story and narrative play an essential role in the development, growth, and sustainability of the organization. In the language of complex adaptive systems found in organizations, story and narrative are foundational to the creation of social networks, and, therefore, to the process of self-organization and emergence.

According to Dooley et al. (2003, p. 62) a basic assumption of complexity theories is that all organizations can be viewed as complex adaptive systems (Anderson, 1999; Coleman, 1999; Houchin & MacLean, 2005). For the purpose of this study, I worked from the assumption that

all organizations with multiple organizational members function as complex adaptive systems, or interconnected groups capable of learning, self-organization, and emergence. The application of a complexity framework in this study was not intended as a means or justification to search for complexity principles or leaders who explicitly or implicitly apply the tenets of complexity theory. Rather, the reference to a complexity framework here, as conveyed above, denotes a conscious choice to reject a more positivist research approach in favor of a qualitative, nonlinear method better suited to capturing the nuances of data within the intricacy of complex change and social interactions and interpretations found in an organization's legitimate and shadow systems.

Research Design

The intent of this study was to facilitate the creation of data-rich research text, composed of multiple leader narratives that illuminate leaders' experiences and then to explore their collective experiences as considered and understood through the characteristics and values that can be ascribed to complexity leadership theory (CLT) and its three-part model (i.e., administrative, adaptive, and enabling). According to this model administrative refers to the more bureaucratic and traditional leader activities that seek business results; adaptive focuses on the "interfluence" or learning dynamic by which change is actualized; and, enabling constitutes the process that acts in the interface between administrative and adaptive leadership (Uhl-Bien et al., 2007).

Just as each change story is unique, no two interviews are alike and it is in this difference that rich data was found. The field texts—comprised of interviews, and observations revealed leaders' approaches to change, as well as their sensemaking of the change context and process as derived from individual experience and is expressed in practice. Clandinin and Connelly (2000) emphasize the difference between narrative inquiry and a more positivist approach with the

notion "that people are never only (nor even a close approximation to) any particular set of isolated theoretical notions, categories, or terms" (p. 145). For the purpose of this study, narrative inquiry within a complexity theoretical framework is best understood as a people-focused approach uniquely suited to explore leader sensemaking, sensegiving, and behavior during complex change.

Three-dimensional inquiry. To guide the participant and researcher exchange and demonstrate how the research is structured, this study situated leaders' experiences within a three-dimensional inquiry space: (1) temporal dimensions that reference the past, present and future (continuity); (2) personal-social dimensions (interaction); and (3) within place, attending to the specific concrete physical and topological boundaries of inquiry landscapes (situation) (Clandinin & Connelly, 2000). According to the authors:

> Using this set of terms, any particular inquiry is defined by this three-dimensional space: studies have temporal dimensions and address temporal matters; they focus on the personal and the social in a balance appropriate to the inquiry; and they occur in specific places or sequences of places. (Clandinin & Connelly, 2000, p. 50)

The research was framed within the three-dimensional narrative inquiry space and the directions this space affords: (1) backward and forward temporality or the past, present, and future; (2) inward, toward internal conditions such as feelings, hopes, aesthetic reactions, values, and moral dispositions; and, (3) outward, the environment or context (Clandinin & Connelly, 2000). The intent was to document and understand the narrative in these three ways, and to probe through questions that point in each direction.

Narratives. As with all leaders in complex systems, in a narrative inquiry study the researcher must be willing to give up strict control over the research process and approach interviews as conversations, anticipating that almost any question can generate a narrative (Riessman, 1993). Therefore, the interviews proposed in this study were approached as

conversations guided by five to seven broad questions that lie at the heart of this study, as noted at the beginning of this segment, and supplemented by probe questions based largely on the six "points of interest," noted previously. As stated, these questions were guided by an interest in leader perceptions, behavior, and influence during change. To initiate storytelling, I requested that the interviewee describe an experience leading complex change; multiple stories of both failed and successful change were sought.

As previously noted, the use of narrative inquiry in this study did not adhere to the traditional "life story" use of the methodology; rather, each interview lasted approximately 60 minutes and the narratives obtained were focused on the leading change experience. The content of the narratives contributed to a pool of data that was coded and summarized to reveal common themes and particular insights to be found in the multiple leaders' change narratives.

Narrative analysis. Foremost to the data analysis process is to recognize that narratives are limited representations of experience and our analyses of these representations do not seek perfect truth. To this point, the richness of the data is not found in "truth" but rather in the form and content of the narrative's story. Riessman (1993) maintains that interpretations in narratives are inevitable because they are representations, a point illustrated in the following quote:

> All forms of representations of experience are limited portraits. Simply stated, we are interpreting and creating texts at every juncture, letting symbols stand for or take the place of the primary experience, to which we have no direct access. Meaning is ambiguous because it arises out of a process of interaction between people: self, teller, listener and recorder, analyst and reader. Although the goal may be to tell the whole truth, our narratives about others' narratives are our worldly creations. Meaning is fluid and contextual, not fixed and universal. All we have is talk and texts that represent reality partially, selectively, and imperfectly. (p. 15)

Bruner (1991) reasons "hermeneutic interpretation is required when there is neither a rational method of assuring the 'truth' of a meaning assigned to the text as a whole, nor an empirical method for determining the verifiability of the constituent elements that make up the text" (p. 7).

At the analysis stage of the inquiry, texts were examined within their social, cultural, and historical contexts from different leader perspectives, and these were systematically related to the narrative means deployed for the function of laying-out and making sense of experiences, while also extrapolating to better understand particular experiences. As required in any narrative analysis, the goal was to establish the relationship between narrative and experience in order to make transparent and document how participants arrive at their interpretive conclusions (Bamberg, 2012).

According to Riessman (1993), analysis in narrative studies opens up the forms of telling about experience, not simply the content to which language refers. Therefore, to grasp deeper meaning we ask, why was the story told that way? The overarching goal with the narrative inquiry methodology was to understand substance, learn about the general from the particular, and make theoretical claims through method. As noted by Riessman (1993), "individual action and biography must be the starting point of analysis, not the end" (p. 70).

Thematic analysis. Riessman (1993) makes the case that a good narrative analysis prompts the researcher to look beyond the surface of the text. According to Daiute (2014), a good way to look beyond the surface is to identify themes. The author defines a theme as "abstract (and often fuzzy) constructs that link not only expressions found in texts but also expressions found in images, sounds, and objects" (p. 11). Daiute underscores the value of narratives as a report of personal subjectivities (memories and feelings about experience) and connects the importance of themes in a narrative inquiry by recognizing that content or theme is authentic and embodied in a person and their interpretation of experience.

Boyatzis (1998) begins his seminal book, *Transforming Qualitative Information,* by describing thematic analysis as a "way of seeing" that is often different than how others might

see it. The author refers to thematic analysis not as a method, but as a process that can be used with qualitative methods and that "allows for the translation of qualitative information into quantitative data" (p. 4). For a more technical explanation, Boyatzis (1998) describes the process in the following manner:

> Thematic analysis is a process for encoding qualitative information. The encoding requires an explicit "code." This may be a list of themes; a complex model with themes, indicators and qualifications that are causally related; or something in between these two forms. A theme is a pattern found in information that at the minimum describes and organizes possible observations or at the maximum interprets aspects of the phenomenon. A theme may be identified at the manifest level (directly observable in the information) or at the latent level (underlying the phenomenon). The themes may be initially generated inductively from the raw information or generated deductively from theory and prior research. (pp. vi–vii)

According to the author, thematic analysis moves the researcher through three phases of inquiry: (1) recognizing an important moment, or *seeing*; (2) encoding it or *seeing it as something*; and finally, (3) interpreting or *making sense of* what you have seen (Boyatzis, 1998). The intent of the use of thematic analysis in this study was to use the data gathered through narrative in a systematic manner to increase the sensitivity in understanding and interpreting observations about organizations, leaders, and their sensemaking of complex change.

Data Collection

The Process.

1. Recorded interviews with 21 diverse organizational and/or change leaders currently involved with or having experienced one or more complex change initiatives within the past five years. The interviews were conducted in-person where possible and with one exception, include one leader from each organization.

2. Applied the Constant Comparative Analysis (CCA) method as an iterative and inductive process of refining the questions and interviews to elevate relevance and meaning.
3. Reviewed information available to the public, pertaining to the individual leaders and their organizations, in order to prepare for the respective interview.
4. Analyzed data and the interpretation of the narratives based on content, employing an applied thematic analysis process, utilizing the Dedoose qualitative data analysis software.
5. Assessed change stories and outcomes described in the narratives from the perspective of complexity theory's three leadership roles: administrative, adaptive, and enabling.
6. Completed a dissertation utilizing authorized data while maintaining participant and organization confidentiality, documenting leader sensemaking, leader behavior, change process.

Participant Demographics

The following is a thematic analysis of the stories of 20 change leaders. All participants included in this study were organizational or institutional CEOs, presidents, or executives involved with leading complex change (see Table 3.1). They included: two from government, three from healthcare, three from higher education, six from non-profits, and six from the private sector. The single requirement for the participants in this research was that each had led a significant change initiative within the previous five years, regardless of the change story they chose to share during the interview. For the purpose of this study, complex or large-scale change was defined as involving multiple divisions within the respective organization, with no less than

100 stakeholders. Though gender, age, and race were not predetermined factors, it is worth noting that there were six women (one Hispanic, four Caucasian, and one African American) and sixteen men (one Hispanic, three African American, and twelve Caucasian). The participants ranged in ages from 40 to 72 years. Table 3.1 contains a demographic summary:

Table 3.1

Participant Demographics

Participant Alias	Age Range	Industry	Location
1. Leana	60–65	Government	Washington, DC
2. Jake	70–75	Non-Profit	Lambertville, NJ
3. Christine	55–60	Government	Washington, DC
4. Jason	45–50	Private Sector	Seattle, WA
5. Howard	45–50	Non-Profit	Washington, DC
6. Jim	35–40	Private Sector	Washington, DC
7. Pat	45–50	Private Sector	New York, NY
8. Barry	55–60	Private Sector	New York, NY and Melbourne, New Zealand
9. Lawrence	60–65	Non-Profit	Philadelphia, PA
10. Matt	55–60	Higher Education	Geneva, NY
11. Larry	40–45	Private Sector	Wilton, NY
12. Rena	55–60	Higher Education	Flagstaff, AZ
13. Tim	45–50	Health Care	Prescott, AZ
14. Jerry	70–75	Non-Profit/Private Sector	Boston, MA
15. Sharon	55–60	Higher Education	Raphael, CA
16. Jack	70–75	Health Care	Lebanon, NH
17. Russ	55–60	Private Sector	New Hope, PA
18. Susan	55–60	Private Sector	Philadelphia, PA
19. Bob	55–60	Non-Profit	Cleveland, OH
20. Allen	55–60	Non-Profit	Cape Cod, MA

Research Method

This qualitative research study used narrative inquiry methodology to understand significant leader experiences through story, a fundamental way in which meaning is expressed. Narrative Inquiry was selected for this research for its capacity to facilitate a deeper and more nuanced analysis of leaders' experiences, and for its compatibility with social construction theory, or the notion that peoples' interpretations of reality are socially constructed.

Interviews. With both researcher and participant biases acknowledged, narrative inquiry is premised on an authentic exchange between the researcher and the interviewee. Based on this principle, it was this investigator's belief that in-person interviews would yield richer and more compelling data than phone interviews, therefore, as many of the interviews as possible were conducted in face-to-face meetings. Prior to each interview, signed consent forms were obtained and participants were informed that their participation in the study would remain confidential, and pseudonyms would be used for participant and organization names. The recorded interviews were uploaded to a file housed on a secure computer.

Following narrative inquiry guidelines, each participant was asked to share his or her experiences leading change in a loosely structured format, and the participants were encouraged to tell their stories in any manner they chose. Questions used during the interviews were not predetermined, but rather were based on the stories shared, and were focused on understanding the leaders' change experiences, change learning, the values that guided their behavior, and their influence during the change process. As noted in the introductory section, questions that originated from the researcher's interest were focused on leaders' change approach, sensemaking, internal and external contextual factors, change supportive work environments,

and leaders' support of organizational members in the change process. Queries emanating from these topics were used to probe the participants' narratives.

Analysis

The analysis of this study is based on the coded transcripts that convey leaders' stories about their experiences. These coded excerpts of the original transcripts are at the heart of the analysis. Therefore, rather than brief quotes, selected excerpts that convey the leaders' meaning are included.

Phase one: transcriptions. The recorded interviews were uploaded to a secure computer and then transcribed by the investigator, resulting in 267 pages of single-spaced, one-sided interview text. A single investigator transcribed all of the interviews to ensure confidentiality and assist in the investigator's familiarity with the data. The interviews were then read through in their entirety a minimum of two times, and initial themes and comments were noted in the margins of the documents.

Phase two: coding. In the second phase of the research analysis, electronic copies of the transcripts were uploaded to the qualitative and mixed methods software, Dedoose. The software facilitated the process of thematic coding in which the researcher works from the transcripts to create "parent," codes and their subordinate "child," and "grandchild" codes. The subordinate codes contain properties and descriptions of the parent code concept and are used to further define thematic development. Both the parent and subordinate codes are applied to corresponding excerpts from the transcripts. In other words, the codes were created according to themes determined by the investigator and derived from the data through an inductive method and then applied to excerpts from the transcripts that matched the code themes. The thematic coding activity is a data-driven research approach involving a gradual process of code generation

and refinement. In this method "researchers must have a great deal of faith that they will arrive at a desirable destination, especially because they do not know where it will be, what it will look like once they are there, and how long it will take" (Boyatzis, 1998, p. 29).

The initial coding process in this study generated 47 primary or parent codes and 416 secondary or child and grandchild codes, and a total of 2,391 code applications (note that the large number of code applications is largely the result of creating general coding categories such as, "leader challenges" or "change process" that were not used in the final analysis). At this stage in the process, the codes were reviewed and revised, which involved matching the code to the excerpt and reviewing the code to ensure a good fit existed between the parent and child codes and the interviewee's meaning. For example, consider the following excerpt from the CEO of a global organization:

> I definitely think communication is important; I kind of have a very basic level for leadership. For me it is competence, courage, and communication. I think that leaders have to do everything they can to prepare themselves to be competent. Which is often at the expense of things you might do in an expedient way to be politically successful, because competence is about learning and hard work and failing and doing things that reveal you to be flawed to the world. Courage is obvious, and communication I think is really important. I just think you have to communicate, especially for large organizations, in very precise and consistent ways.

In the initial stage this single excerpt contained four primary code and five child code applications. In the refinement process, the question for this excerpt became: Are the parent codes best described by "Leader Motivation and Values," "Leadership Approach, Style and Methods," "Basic Tenets: Commitment, Communication and the Golden Rule," and/or "Conditions for Transformation?" In this case the parent code "Conditions for Transformation" was dropped and the other three parent codes were retained. As described above, in phase two of the analysis related codes were reviewed, revised, and deleted and/or combined where

applicable, and renamed as the investigator considered appropriate. In round two this process reduced the parent codes to 22 and the child codes to 437.

In the final phase of the coding activity, the parent and child codes were reviewed once again and the revision process was repeated. The key goal was to fine-tune and reduce the primary themes from 22 to no more than ten. As illustrated below, in this final phase of coding a total of six primary themes or codes were created from the data. Two additional parent codes were created to support the six primary themes: the first, "the Change" to house leaders' stories used to illustrate a point or concept, and the second, "Tools, Quotes, and Metaphors" to house all management tools, quotes, and metaphors noted in the interviews. A total of 398 child codes (child plus grandchild codes), 647 text excerpts, and—with multiple code applications per excerpt—a total of 2,716 code applications were available for the final analysis.

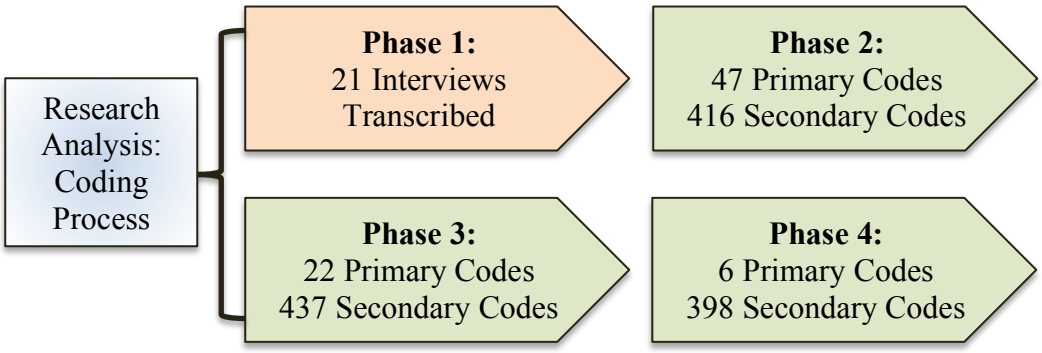

Figure 3.1. Coding process.

Researcher Positionality

As the researcher, I came to this study with more than 25 years of experience working with government and non-profit programs as a trainer, project manager, consultant, and company executive. As a practitioner, I have focused primarily on consulting associated with large-scale change and human transitions. This dissertation research reflected my desire to better understand

change leadership in all of its complexity, possible reasons for successful and/or failed change, and the appropriate role of change leaders in complex and turbulent environments.

Having lived in various regions of the United States and abroad, I approached this research with a healthy understanding of various world and organizational cultures. This experience led me, I believe, to develop a strong appreciation for positive and relational approaches to leadership. Moreover, through my experiences and studies, I have come to appreciate and value the benefits of a participatory approach to leadership and change. Here, I make explicit my bias toward a relational leadership approach and my suspicion of command-and control-leadership styles. Over the course of this study I encountered a variety of leaders and leadership styles and worked to mitigate and control my personal bias throughout the duration of the research.

Ethical Considerations in Narrative Inquiry

In narrative inquiry research, as in all aspects of life, ethics deals with the moral principles that govern human behavior. In the following Josselson (2007) outlines the fundamental principles of ethics in narrative inquiry:

> As social scientists, our primary task is the better understanding of human experience in society [organizations], and in time and we believe that this knowledge will ultimately and along the way lead to a betterment of human life. We cannot fulfill this task unless we can study humans as they are engaged in living their lives, and we cannot do this without incurring some potential for risk. There are few worthwhile endeavors that are completely risk-free. Above all, an ethical attitude requires that we consider the dilemmas and contingencies rampant in this work. We can never be smug about our ethics since the ice is always thin, and there is no ethically unassailable position. We must interact with our participants humbly, trying to learn from them. We must protect their privacy. What we think might do harm we cannot publish. We cannot put our career advancement over the good of participants. …I believe that if we work from these fundamental principles, we can do this work ethically enough. (p. 559)

Narrative inquiry scholars, Clandinin and Connelly (2000) see ethical matters as dynamic and situate the practice of ethics throughout the narrative inquiry process:

> Ethical matters need to be narrated over the entire narrative inquiry process. They are not dealt with once and for all, as might seem to happen, when ethical review forms are filled out and university approval is sought for our inquiries. Ethical matters shift and change as we move through an inquiry. They are never far from the heart of our inquires no matter where we are in the inquiry process. (p. 170)

Specific to narrative inquiry, relational issues structure the enquiry process and are at the heart of ethical matters. By reframing ethical concerns into concerns of relational responsibility Clandinin and Connelly (2000) offer narrative inquirers an alternative way to think through the many layers of complexities, uncertainties, and possibilities that are inherent in the unfolding of a narrative inquiry. Every aspect of the inquiry work is touched by the ethics of the research relationship, though technical and legal concerns are often at odds with a relations-based research methodology. According to Josselson (2007), "narrative research consists of obtaining and then reflecting on people's lived experience, and unlike objectifying and aggregating forms of research, is inherently a relational endeavor" (p. 537)

A concern of the mandated ethical review is that the process may not allow for relational issues, which in narrative inquiry underpin the entire inquiry process. The ethics of relationships, or interpersonal ethics demand responsibility to the dignity, privacy, and wellbeing of those who are studied, and these may conflict with the scholarly obligation to accuracy, authenticity, and interpretation (Jossleson, 2007). Narrative researchers have an ethical duty to protect the privacy and dignity of those we study. However, in practice this "self-evident principle is fraught with dilemmas of choice that attend ethics in all relationships" (Josselson, 2007, p. 537). Herein lies the ethical research conundrum, one that can only be managed or resolved through the exercise of good ethical and moral judgment. As noted by Kim (2016), narrative ethics in practice calls for judgment as a way to address ethical issues that we encounter in specific, situated cases of our narrative inquiries.

Results

Purpose

This qualitative study was designed to investigate the perceptions, sensemaking, and behavior of leaders during complex change events as they experienced them in their leadership roles. Specifically, the study examined leadership through the content, meaning, and detail in which each individual chose to narrate their experiences. Acknowledging the extent of leader influence referenced throughout the literature, the primary purpose of this work was to contribute to our knowledge of leadership and leader impact during complex change, with an express goal of understanding how we as academics and practitioners might better appreciate, support, and develop change leadership. This section highlights the key findings of the study.

Study Process Outcomes

From September 2016 through mid January 2017, a single investigator conducted 21 interviews: four over the telephone, and 17 face-to-face, in 13 cities across the United States, as noted in Table 3.1. These interviews took place in or, as in the case of the two federally employed interviewees, at a location near the participants' organizations. Considering the busy schedules of these prominent individuals, the goal of requesting a 60-minute conversation was to ensure a solid 45 minutes of recorded interview time. To this investigator's surprise, all of the leaders in this study agreed to a full hour, and a majority were willing and able to spend even more time for the interview. As a result, the average length of the interviews was approximately 72 minutes of recorded interview time. Interestingly, the shortest interview, lasting 40 minutes, was the only one of the four telephone participants in the study who was not a previous acquaintance of the investigator.

It should be noted that one of the in-person interviews conducted was dropped from the final analysis. The reason for the exclusion was the investigator's subsequent knowledge that at least a portion of this narrative was not truthful. In a conversation that had taken place a year earlier, the same individual shared his early work history, which was different than the account he gave during the interview. I corroborated this discrepancy with a colleague that had been present during the earlier conversation and independently confirmed that the story told previously was considerably different than the story shared during the interview. (I conducted online research of the individual's early work history and confirmed that a portion of the story he had shared during the interview was fabricated.) That the participant was not entirely truthful and misrepresented his professional experience is not the ultimate reason for the exclusion of this narrative, as this distortion of fact during a research interview is of scholarly interest. The rationale for the exclusion was the investigator's inability to code the material effectively, given the knowledge that the participant was not being honest. Knowledge of this fabrication significantly influenced the attempt at an objective analysis, making it the lone exception to the coded transcripts. It is worth noting again here that relational issues structure the inquiry process and are at the heart of ethical matters. This incident posed a dilemma in the exercise of relational ethics that required, as suggested by Kim (2016), ethical and moral judgment as a means to resolve the issue.

The six primary themes or parent codes and the 20 secondary themes or child codes represented in the findings of this study do not include the 378 grandchild codes that emerged from the analysis process.

The Findings

A disaggregation of the data into six primary themes and 20 supporting themes or codes is represented in Table 4.1, Study Themes. All remaining subordinate codes are not included in this outline due to the large quantity of subordinate codes, but are included in a detailed outline (see Appendix A). Directly following Table 4.1 is a section containing the six primary themes, their descriptions, and a number of select excerpts from the 20 transcripts illustrating each of the primary themes.

To provide a graphic breakdown of the study's findings, the section following the theme descriptions and their excerpts provides a process flow chart illustrating the interaction of the study's primary themes and a representation of the central findings. This representation emerged directly from the data and reflects leaders' sensemaking in their respective change environments and the subsequent interaction between leaders' personal values, as derived from experience, culture and context, and the ensuing leader behaviors (approaches) influenced by these values

Themes and Subthemes Illustrated by Corresponding Excerpts

The following section begins with a representation of the themes and their subordinate concepts as derived from the data. Table 4.1 is followed by a description of each of the study's six primary themes and their corresponding subthemes, beginning with the critical notion of leadership approach and the three distinct styles that emerged. Related excerpts from the transcripts that illustrate each theme's meaning are presented. Table 4.1 contains the study's primary and secondary themes and reflects this section's structure.

Table 4.1

Themes

Primary Themes	Subthemes
Theme One: Leader Values	Assume the responsibility and authority Be motivated by the greater good Seek change beyond traditional boundaries
Theme Two: Culture and Context	Identify change perspectives: Opportunity or loss? Embrace diversity, inclusion, and equality Optimize cultures
Theme Three: Leadership Approach	Traditional Complexity Complexity-Plus
Theme Four: Group Engagement	Build relationships Embrace tension
Theme Five: Conditions for Transformation	Create emotional safety Embrace resistance and suspend disbelief Foster experimentation, tension, and creativity Align change goals Dream down and work from the bottom up
Theme Six: Basic Tenets - Commitment, Communication, and the Golden Rule	Commit to the purpose Listen and learn Communicate and be transparent Treat people correctly

Theme one: leader values. As a driver of leader behavior, the *leader values* theme is central to the findings of this study. The data from the narrative analysis reveals that personal values, shaped by life experiences, organizational cultures, and environmental contexts lead to the three leadership approaches as derived from the data: traditional, complexity, and complexity-plus. Throughout this study, leaders repeatedly referenced their values—often sharing how and where those values originated in their life experiences —when reflecting on or

reasoning their particular response to a leadership challenge, or in describing why they had structured their organizations in a particular way. The three subthemes featured in leader values: (1) assume the responsibility and authority; (2) be motivated by the greater good; and (3) seek change beyond traditional boundaries, underlie the characteristic leadership styles labeled as "traditional," "complexity" and "complexity-plus." Described below—and illustrated by excerpts from the transcripts—are leaders' critical values, including a representation of the theme, and its subthemes.

In the following excerpt the leader reflects on core personal values, which have significant influence on his leader behavior and approaches to change. In this passage Jerry reveals two critical values of a complexity style leader; that is, creating *psychologically safe work environments* and *treating people well*. He also shares that he developed these leadership values from his social activism in the 1960s:

> I think that a lot of people don't take responsibility for what they do and they're afraid when it goes wrong and I didn't care. I say I tried and failed. A frail human being I tried it and it didn't work. To me that was just human values. Just, you tried something you failed, and this organization, as opposed to a lot, is not risk adverse. So we try things and we fail, which is fine. I always say to the young people who come in. There is no penalty for failure here. Don't try to fail, do it reasonably but if it turns that you try something and it doesn't work fine. It will never come back in the personnel review. The only thing you will get faulted for is if you never have an idea, that's probably worse. It comes from how I wanted to be treated and how I think other people should be treated and how ego gets in the way of so much leadership. So I think it's those kind of things that, so like I said, were where my values came from, who I hung out with, I think the times, I think the 60s were important in the sense of trying new things and breaking down barriers and you know most of my friends are not business people but more academics and social activists kind of people, so you know it followed.

Subtheme one: assume the responsibility and authority. In the following excerpt Bob references a book that features a conventional management style. From this selected reading he shares his musing on the task of leadership, describing it as "accepting the invitation." The following excerpt reveals Bob's sensemaking for how he approaches the leadership task and

provides an example of values that reflect a traditional approach to leading change, as suggested by his book reference and his commitment to "assuming the responsibility and indeed the authority" of a leader:

> The book he picked for me, *Being the Boss*, you can Google it, but there were three things in there that struck me very much as, that I hold onto: number one, manage yourself; number two, manage your team; and number three, manage your network. I've thought a lot about, you know, leadership and management and that classic definition of leadership is doing the right thing and management is doing things right. I think I very much play to that notion of accepting the invitation to assume the responsibility and indeed the authority that has been given to me for the period of time that I hold a job that is a leadership position.

Subtheme two: be motivated by the greater good. In the following passage Russ is speaking from his experience of "what I have seen that works," and he defines what he thinks being selfless means in an organization. "Selflessness" and a willingness to forgo professional gain or advancement for the good of the organization and its members constitute a complexity leadership value that embodies humility:

> What I've seen that works is selflessness. And I think that in order to be selfless genuinely is you need to be more concerned about the entity and the individuals in the endeavor than yourself, and if that is authentic and you have the right level of curiosity, and you have the right talents and skills then people will want to be on that team or follow that leader. So leadership for me doesn't come from wanting to be a leader. The characteristics of a leader are somebody that has those qualities that puts the individuals in the endeavor at the front of the activity.

Subtheme three: seek change beyond traditional boundaries. In this passage Allen reveals that his change goals for conservation are visionary and global:

> On the mission side the greatest change is, and I've set this out as my mission and my vision, is to literally change the face of conservation. I want to change the definition of conservation. [Within WAFI?] No, the world, I want to change the face of conservation in the world. …Now when you talk about change that is a seismic change and we are having success. We are beginning to get in roads, demonstrated by donors' willingness to fund that approach and the government willing to fund that approach. And that brings out a lot of knives, a lot of knives.

In the next excerpt Jack rejects what he calls the "corporatization" of everything, referring to it as a prevalent and constraining paradigm. This speaks to principles that encourage thinking outside of the organization and societal norms and reflects the values of a complexity-plus leadership approach:

> I don't use values and "who you are" because I think "who you are" changes a lot. I look at it more as you have to react to a paradigm that is prevalent in the United States, and that is of the "corporatization" of everything, and you have to recognize that is a very constraining paradigm for many people.

Jack's comments in the following passage provide us with a clue as to why he seems to reject traditional norms:

> In my situation the story I would tell is interesting in one sense. I have no memory of anything before I was eight. I'm pretty sure the reason is because my father dropped dead in front of me when I was eight. . . . Ya, so that cleaned the slate. Uh, and at age 12 one of my classmates died in my arms. She drowned and it didn't work, what we tried to do to bring her back. . . . That you can say I'm going to be head of medicine or head of Dean and that's fine but unless there is really a way you can change the quality or see a way that you are going to do that in a meaningful way, tenacity can be a real, you know it becomes a rent-seeker, you don't realize . . . I'm trying to remember, uh George Orwell said in shooting the elephant you wear the mask and the face grows to fit it and that is what happens in corporate settings.

In Jack's approach it is evident that his identity is not defined by traditional norms or the power of social systems. Jack demonstrates his visionary values by rejecting numerous offers at prestigious institutions in favor of the non-traditional path. For example, he rejected a Chief Resident position as a young professional in favor of an innovative medical training program out of Stanford. Jack went on in his career to found an online health assessment and feedback program in the 1980's that he has since expanded internationally.

Theme two: culture and context. Culture and context comprise the organizational environment that includes internal and external events and/or conditions that shape and guide leader behavior. This theme interacts directly with l*eader values* to generate sensemaking, or the

leader's meaning making and sense giving in a change environment, a process by which people rationalize their own actions and the actions of others forming the springboard for action (Weick, 1995).

An organization's internal and external cultures and contexts influence the decisions leaders must make to implement change effectively. Leaders of these global organizations reflect on the core values that remain consistent, and on the cultural differences that represent external contextual influences, as noted by Jerry in the following excerpt:

> So we have eight offices, I guarantee the culture in every office is slightly different; they can never be the same. You know, the culture on this floor is different than the culture on the top floor. So they are different, if you walked into the office in Ghana you would know it's a JPA office, it's how people are treated, it's the mission of the organization, it's the organization's values. Now, would it be more hierarchical in Morocco? Sure, it would be, that's the culture. We have an India office it's more hierarchical but still . . . I'm trying to say there are certain basic tenets of how you do it. You have to be committed to the causes, you have to communicate and be transparent, and you have to treat people correctly. I don't care if you fire them or not. So you have to do all of those things. . . . No two people manage the same, some will be better some will be worse, but if you really enjoy and love the organization then you have to put down what you think are the core values that can't change. And that's the advice for the person coming in, that you can change anything you want but the core values of how you treat people, what you focus on, they and how you do it, with integrity, with openness, with transparency those have to be there.

In the following passage Allen makes a critical point: it is the strength of his organization's culture that provides the resilience it needs to weather external cultural forces and fulfill its mission around the globe.

> The Europeans think that the Americans are brutal when it comes to making structural changes. So make structural changes and a number of people leave. You just can't do that in Europe, they are horrified. They just can't wrap their minds around it. It's terrifying to them. So you will see incredible clashes, within the organization around changes that are seemingly benign. Like data change where uhm you know change the first name to the last name in the data set. So the Americans say oh god what are they doing now, and they just change. The Germans want to take you to court, "you know you can't do that that's not how we do things." So I think in that instance the WAFI culture has to be stronger and it has to be one that makes sense to people in how it translates to impact. If it doesn't they won't accept it, then they'll fight against it.

The theme's three subthemes reflect internal contextual influences on leaders' change approach: (1) *change perspectives—opportunity or loss,* constitutes an organizational member's perspective on the change that emanates from his or her sensemaking and determines how the person will feel and act in regards to the event. It is a strong contextual element that influences individual behavior and leader approach; (2) *diversity, inclusion, and equality*, is considered a strong indicator of the health of the organization's environment and culture. Companies or institutions that genuinely value diversity (as in ethnic, racial, gender, etc.), inclusion, and equality amongst its members are considered better able to leverage resources at all levels of the organization; and, (3) *optimize productive cultures*, references organizational members, policies, processes, and structures that are effectively aligned with the entities core values, and are therefore able to optimize organizational resources.

Subtheme one: identify change perspectives—opportunity or loss? Individual change perspectives can create a powerful context for the organizational change environment. In the following quote Pat reveals how perceptions about threat to positions and power are created by external conditions:

> The most significant change effort I was part of was the change effort at the ___ newspaper when we were trying to lead the change effort to a digital organization. This was the most difficult because it was going from the current configuration to it's online future and it effected everybody in so many ways, and it was so threatening to the organization. I mean, OMG, and look at where the newspaper is now.

In the following passage Allen reveals how attitudes toward change are the contextual conditions the leader must identify and manage in order to lead change effectively:

> When you unlock the creative, you know, the intention of some people, they just explode and they embrace it. Many times it's not change it's things they came up with its creation as opposed to change. They don't see it as having to change behavior but they see it as opportunity. Others see it as, I have to stop doing what I'm doing to do what he wants me

> to do, and even if they ultimately agree that it's a good thing for the organization they view it not as an opportunity but they view it as an imposition.

Subtheme two: embrace diversity, inclusion, and equality. *Diversity, inclusion, and equality* set the tone for the organization's context and culture. In the following passage Sharon, a university president, indicates that she is aware of her institution's "progressive" context and that she must strategize to accommodate and ensure a diverse and inclusive culture be maintained:

> We're in the bay area, we're a progressive campus but there are also people here who voted for Trump and I think it is important that those voices are not marginalized too much because it is much more important to understand why and how we got here than it is to object. I don't want to objectify those individuals any more than I want objectify our students, getting the campus to hold back has been hard because they are so hurt and upset. But there are a lot of people who voted for him who are not misogynistic creeps for lack of a better word. . . . The problem is they may not personally behave in that way, but his behavior was so extreme and they knowingly voted for someone who was, and I think that is the tension that is so difficult to manage. But we have to be able to talk about it on college campuses and not let anyone be marginalized.

Subtheme three: optimize productive cultures. In the next excerpt Jerry outlines his formula for cultural alignment around ego, teamwork, mentorship and humor that *optimizes* performance. By plainly defining what the culture is the company is able to manage expectations and create clear alignment amongst its members:

> I've been interviewed by a lot of people who ask me why it works. And basically I've said to them we're very clear about what this culture is. This culture is not hierarchical, the financial side is very tight and the program side is very entrepreneurial. It's very flat and very collegial as opposed to hierarchical. It's very focused on productivity. So we're a profit and non-profit, a lot of these groups in these areas are not well managed, we are well managed. People understand it's well managed. Here people have to work hard at it. We say to them if you have a big ego don't come, if you can't work in teams don't come, if you can't mentor and be mentored don't come. If you don't have a sense of humor don't come. This is very hard work.

Theme three: leadership approach, style, and methods. *Leader approach, style, and methods* reflect a compilation of three categories of leader behavior that, derived from leader

values and influenced by context, comprise the key findings of the study. Leadership approach constitutes the primary theme reflecting subthemes that represent the following three leader approaches to change: traditional, complexity, and complexity-plus. These labels depict characteristics of the three leadership approaches emerging from the data, with the "traditional" and "complexity" labels derived from familiar terminology (and characteristics) in the leadership, change and complexity science literature.

The theme descriptions that follow Table 4.1 begin with leadership approach, which are derived from the values embraced by these leaders and central to the research findings. The leadership approach category emerged quickly in the initial analysis, with each leader indicating particular values that lead to a specific type of change approach or leadership style, being either (1) linear and hierarchical, a traditional style; (2) non-linear and inclusive, an emergent, complexity style; or (3) independent thinking with change aspirations, a complexity-plus style. In this study three leaders reflected a traditional approach, 14 reflected a complexity approach, and three reflected a complexity-plus leadership approach.

The following describes each leadership approach represented as a sub-theme:

Subtheme one: traditional. A *traditional* style of leadership can be described as linear and hierarchical in nature. It constitutes a conventional approach to leadership common in the industrial era and still prevalent in today's organizations. In the following excerpt Lawrence shares his sense of responsibility for shaping and driving the institution's strategy:

> Ultimately, the director and the senior staff, but particularly the director, the leader of the organization, has to take ownership for gathering all of this information together. First of all, shaping it into, and you'll see in the strategic plan four core objectives, and then being sure that strategy, the tactics, the action steps that flow from those objectives are strong and purposeful and easy to understand and actionable, of course. Now you can't let somebody else do that.

Subtheme two: complexity. The term *complexity* in reference to leadership originates from complexity theory and describes a non-linear, emergent approach considered well suited to change implementation in densely interconnected and rapid-paced environments. In contrast to the traditional style, complexity—comprising 14 of the 20 participants in this study—reflects leaders who embody a people focus and decidedly egalitarian style of leadership, such as Larry's approach featured in the passage below:

> The most important thing, if you are calling yourself a leader or are in a position of leadership, it is not a one man sport (laughing) this is not a one single person. By definition if you are leading there is something you are leading. Not a spreadsheet or cash, you are leading people. So don't ever underestimate the power of having great people on your team and spend every minute of your time making sure they stay great, they have the power to be great, they have the tools to be great. For Larry Miller 101, the answers were in the spreadsheet. Larry 202 realizes the answer is in all the great people around me. And never underestimate what they can become.

Subtheme three: complexity-plus. *Complexity-plus* style leaders embody a perspective that moves beyond the organization to think more holistically about addressing societal needs. For the complexity-plus leader there is an inherent rejection of conventional norms and the status quo that guides the individual to seek to create change at a broader level. It is a style of thinking like that demonstrated by Jack in the next passage:

> So where I watched my colleagues clinical scholars and others rise up in urban settings because that is how the urban college is, much more hierarchical dealing with large numbers, and because they were there they could go to meetings cuz they could fly out and they could group-grope and kvetch and all this other stuff, and that was never my style because I found that the more you did that the more you group thought. . . . So why be a Dean somewhere and spend time in endless faculty meetings, you know or go group-grope in some national meeting or whatever. When you know half the people are grandstanding, so what are you going to learn from a grandstander?

Theme four: group engagement. *Group engagement* reflects the values that form the foundation for the way leaders approach and interact with organizational groups, and is understood to be a critical leadership function among a majority of the leaders in this research.

Group engagement reveals two significant subthemes: The first, build relationships that endure, embodies the notion of treating people well by underscoring the need to make genuine connections to colleagues. In other words, to know each other in more than a strictly professional manner, getting to know one another "emotionally." This bond permits an authentic exchange and provides a reservoir of strength that allows the relationship to withstand a measure of tension when the inevitable disagreements or differences of opinion occur. It is a notion especially important to change implementation that is perceived as a significant threat and that can create extreme conditions resulting in destructive organizational behaviors. Relationships built of strong emotional connections are better able to expose and resolve issues and underlying tensions that create discord. The second sub-theme, embrace tension, introduces the notion that diversity of experience, style, opinions, race, and background are essential to the quality of decision making; and these constitute a team dynamic of "polarities" that must be valued and effectively managed.

The following illustrates the influence of leadership on group engagement, and a focus on the quality of people and shared accomplishment versus the single person and individual achievements. For Bob a positive "tone" in the group environment is important:

> I think tone is incredibly important and learning to keep a positive face. You know that is what is worth so much, and then it extends itself and you can start to enthuse. And when you get a sense of trust among staff and start to exchange this, it really helps to build teams because you look for the complementarity in others as opposed to you know competing with people who aren't competitors, or whatever, and that means getting a stronger sense of who you are yourself and that helps you domestically and in broader relationships, so all of those methods, but mostly I would say that tone matters.

In the next excerpt Jerry focuses on the quality of people in the organization and the importance of emphasizing team accomplishments:

> Well, it's the quality of the people, all about the people. I say that it's an old management phrase that you can train for technique but you can't train for character. If you saw what

> people do here when they are not working . . . they do aids walks, running half-way houses, being on boards of non-profits and it has nothing to do with the organization. It has everything to do with the people. So part of it is assembling a group of people and convincing them that working on teams, that individual accomplishments aren't as important as the team accomplishments. Unlike the academic setting where you have the senior author and junior author and the graduate student does all the work. Here we give credit to everyone.

Subtheme one: build relationships that endure. The following passage illustrates the critical need to develop strong relationships for teams to work at optimal levels and endure. In this passage Jason advocates for knowing his team members on an emotional level, which requires quality time together away from the workplace:

> I think we are on the same team, I've worked really hard to get to that state but being on same teams means that you have to know them emotionally, you have to know something about their families, their aspirations and their weaknesses what makes them tick and their emotions, and you can't do that if everything is clinical and mechanical and you know always just debating the facts. For instance with my team and I've always believed that you have to spend one night away a year at least, where you can't go home you just have to get to know the people that you work with, it's such a simple thing but it works, you put some pennies in the bank and count, and later when you are fighting you remember something positive about that person and not that you gloss over the bad facts but you are usually more respectful and I think it matters, the accumulation of all of these interactions. If there's too much friction we are wired to shut down.

Similarly, Matt, a university president, utilizes his home to build trusting relationships within the campus community:

> I like to think in a place like this and the appointment that I have you know the benefit of president's house, entertaining becomes easy and you know kind of a community building . . . hospitality people see you in a different frame and understanding and also can secure some trustful relationships that I think endure through good times and then bad, you know and kind of begin in the fox hole together I think is really helpful.

Subtheme two: embrace tension. Diversity is an important team dynamic for Christine, a federal agency director. Illustrating the complexity leadership need to navigate the terrain between equilibrium and disequilibrium (polarities), she recognizes that it is through difference and tension in emotionally safe environments that innovation and creativity can be generated. In

the next passage Christine demonstrates that she has developed a genuine appreciation for the value of a diverse team, what she calls a *team of rivals approach*:

> I mean it's sort of a team of rivals approach, I really think it's important to surround yourself with people who bring different perspectives, and who are culturally, ethnically, experientially different from you. They can't be so far flung that you can't find a point of commonality, but different perspectives are critical to good leadership. And I find myself changing my perspective all the time because someone with a different perspective brings data or experience to a question and causes me to think more deeply and it's been so important. But hiring the right people that ultimately, they have to embrace the values that guide you. And if they embrace the values and the broad strategic framework then having difference is really good, but it is managing polarities, I would call it polarities. That's what it is.

As noted in the above passage, the leader in the next excerpt, a global executive, underscores an important point about diversity: embracing the organization's core values and a broad strategic framework are essential boundaries (containers) for diverse groups:

> When I look back I have made all of my decisions about career based on who I am, and who am I going to work with, and what do I think? Are we aligned enough without you know, uhm I mean back to diversity, you don't want to just find people who are so like you, but I think you have to fundamentally know that you can work with these people and you will learn something from them and it's reciprocal.

Theme five: conditions for transformation. *Conditions for transformation* constitute critical complexity leadership values and, as reflected in varying degrees within this research, are understood as fail-safe organizational environments that support experimentation and change. It is a people-focused workplace that meets individuals where they are and gives organizational members the opportunity to step in and out of leadership roles as the need and expertise warrants.

To create conditions for transformation leaders understand they must tend to key environmental conditions. In the following Russ knows he must reduce anxiety and provide group members with hope in order to create and maintain safe and supportive work environments and the innovation and creativity they generate:

> I've been leading R&D groups and or innovation groups for the last, I don't know 20 years in Europe and Japan and the US and globally, and there's a couple of things that always resonate for me with leading change. One is that people often forget that one of the most important things that you need to do in leading change is to reduce uncertainty and I think people neglect that so that's one really big thing, and then you need to provide hope because there is always uncertainty and then why should we stay with you, so you need to do both. . . . So, what we encourage is experimentation. But you have to really live that because some experiments don't work and you can't punish people for that, you can get on them for not executing well, you know if they're negligent and they're not holding the right meetings or not doing their homework or not prepared. But if there is a valid hypothesis and then it doesn't work then what do you learn from that?

In the next quote Christine references built-in change mechanisms to prevent "calcified" organizational environments:

> It's inherent within government that in all organizations if you do things long enough or even if you work in a bureaucracy that does things the same and doesn't have built in change mechanisms or input new suggestions it becomes calcified and rigid.

In this passage Larry describes a culture where organizational members think of themselves as leaders:

> I want a culture where every question doesn't have to come to me to answer, and so how do we create a culture where we have this engagement at every level of our organization? In my old office I had written up on the white board, "leadership at every level" and I just looked at that every day and said how do we create that? . . . What is cool about it is I have a role to play on the team, but the team doesn't stop and stall out if I don't have the answer. And then the really cool thing about it is, all these people that never thought of themselves as leaders, watching that awakening happening in people for me, I've made some good money now… I'm not downplaying that people are highly motivated by financial gains, but I can easily say that those awakenings are far more rewarding than any financial gain I've ever seen.

Conditions for transformation contains five subthemes:

1. *Create emotional safety* or a fail-safe work environment is considered essential to the health and productivity of the organization and its members. It is an environmental condition highly dependent on leader behavior, awareness, and support. Considered critical to an organization's ability to learn and grow.

2. *Suspend disbelief and embrace resistance* refers to a leader's ability to learn from internal and external sources and to seek out and value critics or criticism as a learning opportunity.
3. *Foster experimentation, tension, and creativity* refers to the leader's awareness of and appreciation for a culture of experimentation, where organizational members are not afraid to fail and where leaders appreciate difference and diversity and the tension and creativity it can inspire.
4. *Align change goals* refers to the mechanism by which organizations create alignment or consensus building around organizational change goals.
5. *Dream down and bottom up* is a two-pronged approach to change strategy that references the importance for the overall vision from the top or "top down" and the imperative need to understand the organization from the "bottom up" or the front lines in order to implement change effectively.

Subtheme one: create emotional safety. The need for emotional safety and security for group interaction, productivity, and innovation is repeated in the leader narratives throughout this research and it is Jason's key message in the following passage:

> There are a number of things that I think are important in a culture to yield inventions. So, one of them is you have to create a place that encourages, that accepts failure. It's not an experiment if you already know the outcome. And if you don't know the outcome some of them are going to fail. So one of the things that we've done is to build a culture that embraces failure. Now if you fail in exactly the same way, two or three times in a row something is wrong, you aren't learning from your mistakes, but we want to be a place that embraces failure.

Subtheme two: suspend disbelief and embrace resistance. The following sentence reflects a leader's ability to demonstrate the importance of engaging critics and meeting

resistance with an open mind. Christine understands how critical it is to listen, learn, and be willing to change one's own opinions and beliefs based on new information:

> I guess the other leadership lesson I learned through that was you've got to confront your critics and listen to them with respect because they speak, some portion of what they say, maybe 100 percent is truth, some of it may be just different versions of reality from different perspectives, but you have to listen to your critics with respect.

Moreover, in the next excerpt Christine reveals how truly challenging it can be to reject the sense of personal affront that can result from criticism, suspend assumptions, and find the fortitude needed to embrace a different mode of thinking:

> I mean, basically what we were managing was incredibly large institutional change at the same time but the sexual assault and medical care was the most difficult because the teams felt so strongly that they supported volunteers and took so personally the allegations from the volunteers, and it's understandable why they felt that way. But they, we had to step away and not take it personally, and listen and then be willing to change how we thought about things and be willing to say I might not have been as volunteer centered as I could have been.

In this passage Russ emphasizes not only the need to communicate, but also the need to meet and understand the critic on his or her own terms:

> You have to do it, uh you know, bite the bullet and have the conversations like really meet them on their turf, on their time to explain what you are trying to do and over communicate, but know where those people stand.

Subtheme three: foster experimentation, tension, and creativity. *Experimentation, tension and creativity* suggests an organizational culture that promotes experimentation and embraces tension as a means to inspire creativity, as noted by Allen in the following passage:

> The most fascinating thing for me honestly is my approach is to attempt to set people free. . . . Right, liberating people in that we need, highly competent and highly confident employees. Right? When you unlock the creative, you know, the intention of some people they just explode and they embrace it.

Russ's approach to creating an environment conducive to innovation is to value a blend of improvisation, rigor, and inclusiveness:

> Experimentation is absolutely valued at the same time rigor is too. So, uhm, I want it to be fluid and creative and almost improvisational but I also want it to be really disciplined, and you know and that means milestones, and objectives, and nobody should be over their budget they hit the number and that doesn't mean we don't change the budget and we aren't fluid with the money and money can go different places and even like a very small tactic is create the biggest contingency you possibly can and keep the operations moving because you want to have the flexibility to throw a million dollars here or there at the problem, so those are some cultural things I try to encourage that, and then inclusiveness as well.

Subtheme four: align change goals. Creating organizational alignment around change goals and objectives is a key leadership skill and an important value for a majority of the leaders in this study. To create, change alignment leaders employed a number of mechanisms and consensus-building processes, such as those described below, beginning with Jason:

> In a very broad organization you need mechanisms to lead beyond line of site. We call it mechanisms but processes or programs really well structured and concise as they can be but, I was pushing hard for us to build this program to solve a problem that I could… which was senior leaders completely aligned in their mental models, their use of leader language, and even their point of view about how we should move forward as a company. I wanted to give them a space to challenge their own beliefs and to challenge mine, and even ___ as sort of the company's most senior leadership.

Jake describes his alignment formula as the "concentric circles" that eventually reaches everybody in the organization:

> I knew the place really didn't work and the faculty was divided, and the product wasn't very good and the parents weren't happy. So we set about trying to come up with a solution, and it took a couple of years, but what I learned in the process was that once you start talking to people, and figuring out what is wrong, identifying the issues, and line up a few people. Then you've got a little hard-core group, and then you kinda learn how to express that a little better and go out to the next concentric circle, and pretty soon you've got a working core of people who know what to do. And that again, that's the concentric circle, the pebble in the puddle; you keep expanding your circle of conversation until you've gotten to everybody.

Subtheme five: dream down and work from the bottom up. Dream down and work from the bottom up conveys that leaders value the need for inspiration from the top, while beginning with a genuine intention to understand and consider realities of the organization's front-line work

in its existing context. The following passage describes the dream down and bottom up approaches in Larry's organization:

> I think that speaks a lot to my dad and how we are different, he works from the dream down and I work from the people up. I think that's the way I see it and so for me the challenge is creating a team that really starts where people are and brings them, I use this analogy of standing on the side of the road and I think that a lot of us believe that leadership is about standing over here and looking good and everybody should want to come to this side of the road, and I believe that my job is to go over, to bring, to have a team that goes over to the other side of the road, learns why they are on the others side of the road and the holds their hands and together walks them to the other side of the road.

In this next excerpt Barry describes a bottom-up approach using a DNA metaphor to assess the unique qualities of an organization that must be "unlocked" in order to truly understand the company and implement change successfully:

> and sorry, the other, about the bottom up thing, I think there is a top down thing that has to happen. The starting point has to be the DNA of the organization you already are, and so the first step for me is to unlock the DNA in the agency or the business that you are today. And then in unlocking and being really honest about that DNA you'll find some positives and some negatives or blockers and you'll find some gaps. And it's really a kind of start stop continue kind of process or evolves to an add kind of thing. So that was it so if you go deep into any organization's DNA you'll find some things that and in some elements of that culture that DNA may be potentially holding you back but if just changed slightly could be a really nice point of differentiation.

Theme six: basic tenets—commitment, communication, and the golden rule. The Basic tenets of commitment, communication, and the golden rule reflects four different themes in relation to areas that a majority of leaders in this study perceive as being important elements of effective leadership and change.

In the following Jerry conveys the importance of an organization's core values that cannot deviate if the company is going to achieve its mission and thrive:

> I'm trying to say there are certain basic tenets of how you do it. You have to be committed to the causes, you have to communicate and be transparent, and you have to treat people correctly. I don't care if you fire them or not. So you have to do all of those things. . . . No two people manage the same, some will be better some will be worse, but

> if you really enjoy and love the organization then you have to put down what you think are the core values that can't change.

Derived from the data, the following four subthemes constitute the "basic tenets" of operating a healthy and productive organization:

1. *Commit to the purpose or cause* was thought to be an essential characteristic of organizational members.
2. *Listen and learn* referred to a leaders' ability to implement and conduct routine processes that provide the opportunity to listen and learn from all levels of the organization, creating both knowledge and engendering a sense of being valued by organization's members.
3. *Communicate and be transparent* reflects what is considered to be a vital leadership skill, the ability to continuously communicate and do so in an honest and transparent manner is thought to be the hallmark of a healthy and productive organization. And finally,
4. *Treat people correctly* was considered the equivalent of the "golden rule." Treating people well, with dignity and respect, reflected the most important core value to a productive organization amongst a majority of leaders in this study.

Subtheme one: commit to the purpose. *Commitment* speaks to the leaders and the organizational members' commitment to the vision, values, and principles of the organization and the change initiative. The message is that while differences are welcome, everyone in the company must be committed to the purpose and core values. In the following Tim clearly values the committed individual who never quits:

> I really believe in accountability. Respect, I think commitment is huge. …Commitment to purpose and I think a lot of people will commit and when times get tough they quit, they stop, they change. I think commitment to what you are doing is huge and a few successful

> people, they aren't necessarily the smartest, but I tell you what you would line up and find out that they never quite. You would be like, wow I'm surprised that person is in the NFL because he got kicked off three teams, he barely made it in this but he never quit.

Christine shares that her commitment to the mission of the organization is genuine and her devotion to that mission is the way that she wants to be remembered:

> . . . and care about the mission. You know they asked this question at the ____ how do you want to be remembered, and I didn't know they were going to ask this question, but really, and I mean this, the first thing that came to mind is to be remembered as a person who loved the volunteers and loved the return volunteers and really did my best to make sure that we supported the mission of the organization.

As illustrated by Matt in the following passage, multiple leaders in this study extoled the value of serving in organizations that share their personal values:

> I appreciated the mission of ____ and this institution. It's this you know for me I'd like to think a kind of match of mission and values with my own and both organizations are mission oriented, value centered prizing diversity and inclusion and social justice and response but it all the things that speak to me so. Part of it is I think I've met and found matches of my own value system with the organizations that share that, that espouse that. I'm very much drawn to it so the leadership world becomes that much easier or at least more authentic when you have that kind of confluence of both of those things.

Subtheme two: listen and learn. Seemingly critical to a majority of the leaders in this study is the ability to genuinely listen and learn from members at all levels of the organization. In this next excerpt Tim shares the process he implemented to ensure that organizational leaders have the opportunity to hear and be heard:

> We actually bring a manager in every week, we just ask them two questions. One is we want to give them the opportunity to have the entire senior team hear them. We ask them to share something you are excited about something positive. You know something you like to hear, and we ask them something we need to hear. A challenge, what can we help you with? What should be on our radar?

In a time of crisis Sharon acted quickly to listen and learn from those most traumatized:

> We had a viewing party to watch the electoral returns. . . . The next day I knew that we are a highly diverse campus it's one of our great strengths, diverse in terms of race, ethnicity, religion, gender, sexual orientation. So I knew that people would be concerned the next day but I didn't know exactly how. So I sent an email to my cabinet first thing

> the next morning and said tell me how your teams are doing how things are going and I'm going to walk around campus. I told the cabinet that we would meet in the afternoon so that we could figure out what might be needed. By probably 10:30, seeing how traumatized and frightened people were we shouldn't wait for the cabinet to gather and discuss things. So I dropped by a couple of my vice presidents offices and said I think we need to have an open house at my house which is on campus, because it's the president's house so I sent an email to campus and invited anyone who wanted to come. I didn't say anything about approving or disapproving the results of the election, I just said that I knew it was an intense time and we needed to reaffirm our commitments to being an inclusive and safe community. And we had a lot of people come to that open house and we got kind of the critical mass of I don't know may 80 or 90 people and gathered in two big rooms in my house to talk.

Subtheme three: communicate and be transparent. *Communication and transparency* reflects the perceived need to be transparent and communicative, sharing information routinely and freely and in multiple ways, to ensure that everyone has the information and tools they need to be productive and effective. In the next passage Jason describes how his global organization is able to communicate broadly and ensure alignment with the mission and vision of the company:

> There are 14 now [organizational principles], I was very heavily involved in the conception, and getting the company to change them when I would get to a place where I saw confusion broadly, to change the principles, we had 10 originally. We also had core values, and we had a mission statement. And kind of, people were using them in interchangeable ways that were kind of confusing. So I said, you know we ought to have one page of leadership principals that form the core of our culture. I used those, used that to language in a precise way to communicate as this thing gets bigger so we can keep the culture alive. It turned out to be a very, very powerful leadership insight that I had ever implemented because it is true weave. We've woven those words into the way we give performance appraisals, the way we give feedback, the way we talk about development of our leaders, they way we expect people to behave, even the mission of the company. All those words matter, they're not just kind of posters on the wall.

In the following excerpt Russ conveys the importance of communicating directly and genuinely with staff during a traumatic downsizing:

> I think, I really I think one thing is that there was a real genuine communication that everybody was spoken to in groups of 20 that's a pretty small group you know in a division of 300 people to break them down in groups of 20 is a …the other groups started to do that as well. They saw that as a good idea, but many of the managers, honestly

> weren't doing that, they were just going through the motions. I felt responsibility, you know I felt like a creep for one thing. I knew that the change was right, I knew that we needed to get our financial house in order, you know as a business. My division was impacted less because we were all pretty rigorous, but ya I felt responsible.

In a similar scenario, Susan begins with the recognition that during a company buyout it was not about her, and that open communication was critical:

> I realized it was not about me, it was that the organization and the people and, as I said, I realized how important open communications was. And I still don't understand why people haven't appreciated that more.

Subtheme four: treat people correctly. This theme describes the leaders' perceived necessity for treating people well, with the "dignity and respect they deserve." In the following passages Jerry and Susan indicate that this theme is an essential core value:

> And that's the advice for the person coming in, that you can change anything you want but the core values of how you treat people, what you focus on and how you do it, with integrity, with openness, with transparency those have to be there.

> It's all about who walks in and out of the door every day, you know; who rides up on the elevator. Your people are your strongest assets. You can't concentrate too much on systems and processes and ignore the needs of people.

> I think the people who have been here see it as a model. I keep in contact, they go back to graduate school and they say now I understand what you are trying to do. When you come in and you are 22 you think this is the way it is, and then you find out it's not like that and people don't treat you the same way. So I think we have had some influence in that regard, modeling behavior that says you can do very good work, and be very tight in a business sense and still treat people correctly. And that's an essential value.

Key Findings

Present throughout the narratives in this study is leader sensemaking. A cognitive, whole-systems process, sensemaking is evidenced by the thoughts, concepts, and stories shared that represent values, reveal identity, indicate meaning, and suggest action. We create worlds filtered through our experience and values, and based on the meaning we invest in the information we choose to notice. It is an issue of language, dialogue, and communication,

intrinsically linked to the notion of identity (Weick et al., 2005). A prominent theme in this study was the strong influence of an individual's experience and values on the sensemaking process, as well as the influence of values on the organization's sensemaking and formation of identity. According to Wheatley (2007), organizing occurs around an identity and "once this identity is set in motion it becomes the sensemaking process of the organization (p. 37). Wheatley (2006) conveys that values and the identity they help form are powerful: "The potent force that shapes behavior in organizations and in all natural systems is the combination of simply expressed expectations of purpose, intent and values, and the freedom for responsible individuals to make sense of these in their own way" (p. 129).

Through a values perspective, social constructions of reality—in context of the organization and interaction with its members—create meaning that leaders use to inform and constrain attitudes and actions. As illustrated in the following passage from a university president, Rena's interpretation of her colleagues' behaviors inform her leadership approach:

> It is that sense of joy in their approach to their work. It's their focus on the student and making the student experience better. It's about institutional change and continuous improvement. If that isn't what drives the individual then I can just tell, then it becomes about being too stressed or overwhelmed with work rather than the joy. I get very frustrated when I see institutions not affecting the excellence that they could because of siloed behaviors, or people who approach their work very strategically and how that's going to affect their focus, it will be on their career or their pathway and what they can get out of it instead of bringing the joy to the work because the work is so important.

The following presentation begins with a graphic representation of the sensemaking process—arising from the interaction of the leader's values with the culture and context of the organization—that form the three primary leadership approaches that emerged from the findings. Figure 4.1, Change Leadership Framework: Values and Sensemaking in Complex Systems, charts the sensemaking and the action that flows from this meaning-making process, beginning with the interaction between leader values and organizational culture and context, continuing

down and, contingent on values and sensemaking, diverging into three distinct paths of leader behavior: (1) traditional approach; (2) complexity approach, and (3) complexity-plus approach. The leader approach and style, and team engagement themes are depicted in the chart as the action constructs, shaped by the values that comprise leader behavior and guide the leader's interaction with the organization and its teams.

Within the complexity approach box are two additional primary themes derived from the study (depicted within the complexity frame in Figure 4.1): (a) conditions for transformation, and (b) commitment, communication, and the golden rule. These themes represent organizational constructs that, as depicted here, occur only in an emergent, complexity—based organization. Therefore, no equivalent themes arose from the data that could be clearly represented within the traditional leadership approach. However, this is not to convey that conditions for transformation or instances of complexity-based leadership behavior do not occur within the traditional leadership approach explored in this study; it is to say simply that the data included in this study did not yield these results.

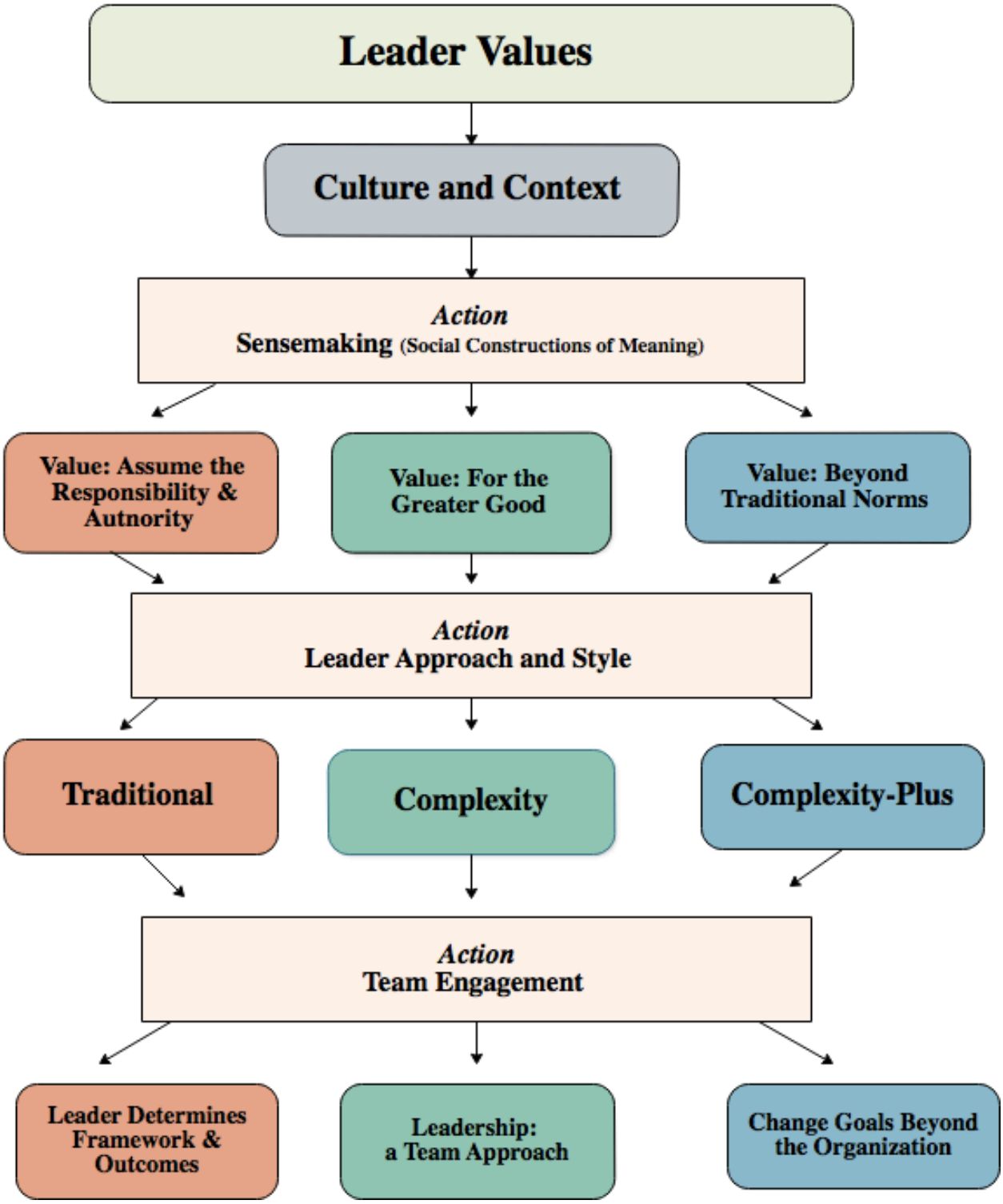

Figure 4.1. Change leadership framework: values and sensemaking in complex systems.

The figure below represents the secondary themes that emerged from the complexity approach primary theme and illustrate the foundation by which a leader in a complexity-based environment facilitates change.

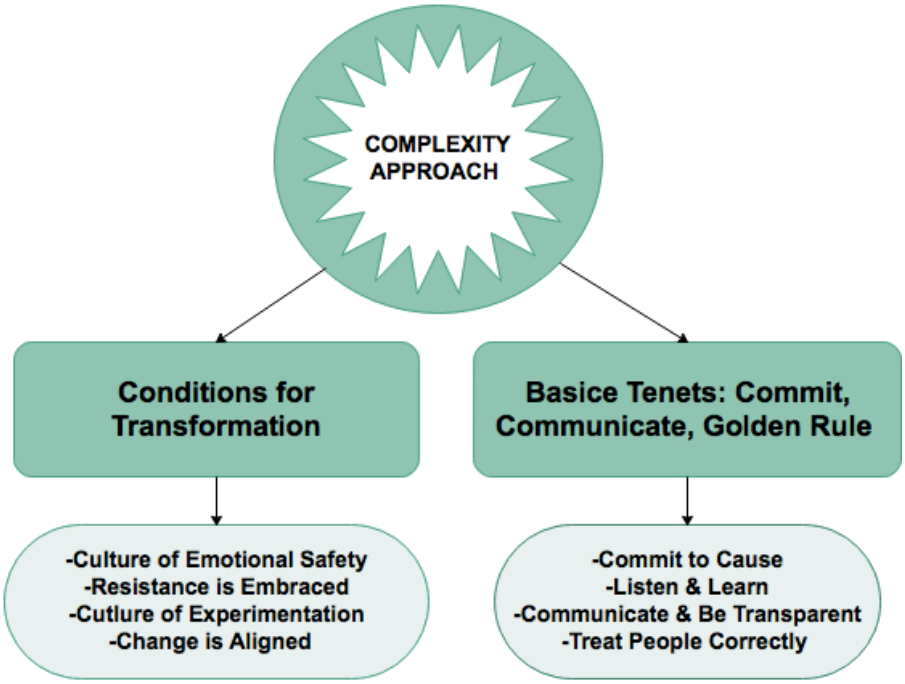

Figure 4.2. Complexity approach: theme breakout.

Study Generated Questions

An in-depth examination of the content of the 20 leader transcripts included in this study reveals compelling questions that arise for 21st century leaders of complex change. Today's dense, global networks and rapid pace of change demands that organizations be nimble learning entities, with an ability to quickly adapt to changing environments. Therefore, we must contemplate how leaders and the organizations they represent thrive in an age of dense global connections and rapid change, and, most importantly, what values best guide these leaders. Specific questions generated by the study findings include:

1. In the 21st century how are our core values different from those of the 19th and 20th centuries, and how have these changed the way we think about and approach leadership in complex organizations?
2. Can leaders whose behavior reflects a traditional approach survive and thrive in the 21st century?
3. What is the role of the fail-safe environments in complexity-based organizations of the knowledge era?
4. What is the role of the "Golden Rule" in complexity based organizations of the knowledge era?
5. What are effective ways to engage teams and create conditions for creativity and innovation? What role should the leader play?
6. How can we support and optimize leaders for the greater good of their organizations and communities? For society? How do we help leaders lead change?
7. What is the role of the "Complexity-Plus" leader and how can we best understand, harness, and learn from these values and this leadership approach?
8. How can we best prepare today's leaders, regardless of demographic or style, for leadership in the 21st century?

Answers to these questions rest at the gateway of a more enhanced appreciation and ability to support leading complex change in 21st century organizations. In section five the key findings are summarized and the results of this study are discussed. The eight questions posed above are discussed in *Contemplating a New Age Paradigm* at the close of section five.

Summary and Discussion

Introduction

Storytelling is an ancient practice. Lived and told stories are one of the ways we fill our world with meaning and enlist one another's assistance in building lives and communities. Reflecting on and sharing one's narratives is a way for us to clarify for ourselves and others the things that matter most. Our stories are not only unique epistemic constructions but ontological artifacts of our own making and doing (Clandinin & Rosiek, 2007). The intent of this qualitative study was to explore leadership through the documentation and analysis of leaders' stories and investigate the meaning behind the telling of individual experiences leading change in complex organizations. Of particular interest were specific leadership behaviors in relation to leadership style, the sensemaking employed, and the influence of organizational context. This section summarizes the research findings and explores questions posed at the end of section four.

It is important to remember that individual personalities are extremely complex, and this is true of the leaders profiled in this study. It is not possible, nor wise, to attempt an absolute classification that will adequately describe any one leader or that person's leadership style. The findings here support what the literature tells us: temperament, culture, context, timing, and the leader's cognitive reaction to specific circumstances all play a role in determining sensemaking and sensegiving. However, by peering into leaders' interpretations and representations of their organizational lives and change experiences, it is possible to identify patterns from the common themes that emerge. These carefully constructed silhouettes help to clarify the complexity in ways that aid our understanding of leader behavior and enhance our ability to support and develop today's leaders, as we strive to comprehend and contribute to the study and practice of leadership at a truly tumultuous time in our history.

Discussion: Study Results

Results of the study underscore the influence and importance of the role that an individual's beliefs and values play in leadership. In the stories of the 20 participants profiled here, values and purpose play a significant part in guiding leadership approaches to change, and, consequently, the influence and impact these leaders have on their organizations. Values are cognitive representations of the important human goals or motivations about which people must communicate in order to coordinate their behavior (Schwartz & Bilsky, 1994). They form the foundation for our understanding of people's attitudes and motivations, because they influence our perceptions of individual and group behavior. Values color the way we see the world.

The study provides the reader with a glimpse into leader values that interact with organizational context and culture to create distinct approaches (behavior) toward leadership and change. To extrapolate, leaders' distinctive approaches to change are based on personal values, a psychological characteristic derived from experience and context. Consistent with previous research, this work reinforces the construct that values and context greatly influence leadership behavior.

Utilizing a narrative inquiry methodology the focus of the research is on the content of the leaders' stories, not on variables or on their distribution across groups or the quantity of the single narratives; it is an important distinction from quantitative methodologies, which emphasize a reductionist approach.

To follow the path of the conceptual model, Figure 4.1, Change Leadership Framework: Values and Sensemaking in Complex Systems first introduced in section four, the following segment begins with a discussion of the study's findings on leader values and the influence of culture and context on sensemaking and sensegiving. Specifically, sensemaking focuses on the

literal process of making something sensible in complex systems, widely accepted as a key leadership and change skill (Steinbauer et al., 2015; Weick, 1995;). As illustrated in the model below, the segment that follows the discussion on values is a review of the sensemaking process that leads to the emergence of leadership style and its segmentation into three distinct leader approaches to change identified in the study: traditional, complexity, and complexity-plus. For the reader's convenience, Figure 4.1, the Change Leadership Framework model is repeated here:

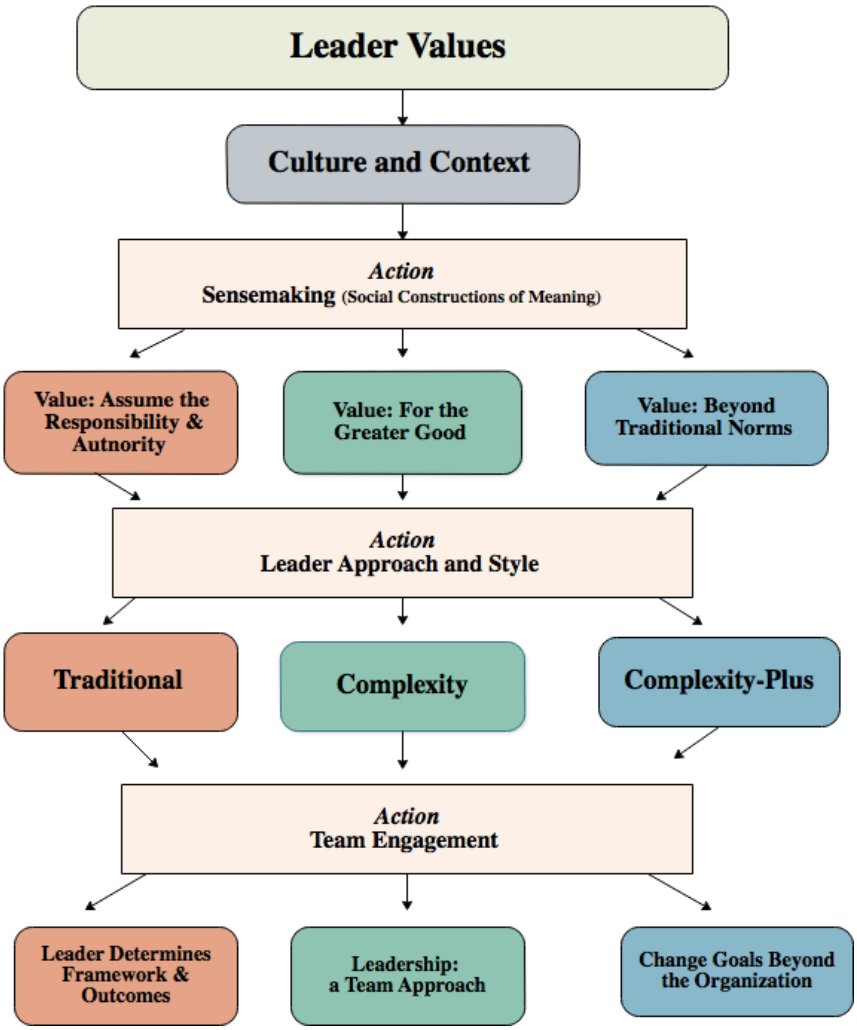

Figure 5.1. Repeat of change leadership framework.

Core Values

A central theme in this research was the critical role of core values. First, the leader's beliefs—as shaped by life experiences and organizational and environmental contexts—and the impact the resulting values had on behavior and influence. Second, the organizations' core values played an essential role in guiding, inspiring, and containing behavior. Leaders in this study referenced the importance of core values for themselves and their organizations. In complexity science core values and strategic framework provide the container or "bounded instability" required for innovation and creativity.

In the following remark Christine recognizes the importance of her government agency's core values to the formation and interaction of a diverse team: "They have to embrace the values that guide you. And if they embrace the values and the broad strategic framework then having difference is really good." This agency director is speaking specifically about core values being the mechanism through which she is able to engage and effectively leverage a highly diverse team:

> So, when I'm in DC a lot of what I do is just making sure that the values that we've committed to live by, and that we have structured into the organizational change continue to be guiding us, that the spirit of our reform effort continues to with every single decision we make, because it's really easy when you run a government organization with all of its heavy requirements and bureaucracy, the easiest thing to do is nothing. To be honest with you, and so to really stay focused on the values that drive our change and the principles behind which we have laid out our strategic plan and implementation plans at every level of the organization really need safeguarding. So I spend a lot of time on that, though I have an excellent senior management team too and I would say that if I have any pearls of wisdom it is to get a phenomenal team around you that carries out your vision while [emphasis] being a diverse group of people. And I would say that those are two really important core principles that are different and require management and in some ways are competing but its so critical to this successful implementation of change.

In a Complex Adaptive System (CAS) an organization's core values are represented in the notion of "self-similarity" or the common schemata that binds us regardless of our

differences. In the physical world shared schemata is represented by fractals, such as fern leaves and broccoli, they are the geometric spaces in which the parts exhibit the quality of the entity's whole (Schneider & Somers, 2006). In the organizational world, self-similarity is associated with the core values that facilitate the creation of the organization's shared identity. Wheatley (2007) argues that especially in times of turbulence organizational members find stability in core values, shared identity, and mutual purpose, not in plans:

> Organizational identity describes who we are, the enduring values we work from, the shared aspirations of who we want to be. . . . When chaos wipes the ground from beneath us, the organization's identity gives us some place to stand. When the situation grows confusing, our values provide the means to make clear and good decisions. A clear sense of organizational (and personal) identity gives people the capacity to respond intelligently in the moment, and to choose actions that are congruent. (p. 119)

The following passage contains important implications for leader influence and leader interventions in guiding change. Consider the organizational value of Mutuality that helps to establish Russ's frame of reference and his behavior:

> There were massive changes in the operating environment and how do we make sure that we can have, continue to have growth we are proud of. We have a principle of Mutuality. . . . So, Mutuality is very important aspect. It means that whenever we deal with anyone it's a fair deal, with the consumer, with the customer, the trade that buys the product from us the supplier and people that work in our supply chain. It's a pretty aspirational concept, one of our five principles. So, with all of the changes happening in our environment, whether you call it climate change or the pervasiveness of technology, how do you make sure that your company grows in a way that you are in control of, and you feel responsible for and proud of? So, we set up to establish a set of grand challenges that were aspirational and a call to action, and if they are achieved they are transformational to the business.

In Russ's comments the company's principle of Mutuality reflects a core value that creates discernable patterns and makes a significant contribution to the company's self-similarity or organizational identity. It is a phenomenon critical in developing the capacity for self-organization that, in turn, fuels the ability to adapt to rapidly changing environments. It is also clear from Russ's comments that he truly believes in the principle of Mutuality, and that the

concept matches his own personal values in guiding his leadership behavior. In the following passage Matt notes the significance of having the organization's mission and values match his own:

> I've been fortunate to be a part of many great organizations and that's the other piece of this, they've been organizations that fit my values and aspirations, and I think it allows one in a leadership role to have it be that much more authentic in terms of what one brings to these. . . . I appreciated the mission of Peace Corps and this institution. It's this, for me I'd like to think a kind of match of mission and values with my own and both organizations are mission oriented, value centered uhm prizing diversity and inclusion and social justice and response, all the things that speak to me. So, part of it is, I think I've met and found matches of my own value system with the organizations that share, that espouse that. I'm very much drawn to it so the leadership world becomes that much easier or at least more authentic when you have that kind of confluence of both of those things.

When faced with core values in opposition to his own, Barry ultimately could not concede. Here he shares his story:

> For me personally, challenges often tend to be around more about compromising my values. I was the CEO of a company in New Zealand, an energy company, and I had a chairman of the board who had a set of personal values that was completely out of line with who I am and my values. So ultimately I left the business, not because I didn't enjoy my job, not because it wasn't a great company, not because we weren't doing good things, but because there was someone present in my work-life who was actually my boss, who, if I stayed any longer I was compromising my values. Let me give you an example: the day I took over as CEO of the organization he walked into my office at 9:00 in the morning and, we had taken over the company in an acquisition, he said, "who's it gonna be?" and I said, "what do you mean?" He said, "you have to fire someone, you have to fire someone today and it has to be one of the executives." So, fast-forward to what I told you about going in and assuming everybody in the room had abilities beyond their current performance and giving them the benefit of the doubt and taking the time to assess that, he says, "no you have to send a message. We bought this company and you are in control here. I don't care who it is fire someone, get their attention." and you know that was about a completely different operating style to me. I refused to do it. He wanted me to fire the CFO and I refused to do it. Ultimately he made it so uncomfortable for the CFO he left 10 months later, but I resisted it for that time and ultimately I left about 18 months into the job, and for those kinds of reasons, just fundamental differences.

The message shared by these three leaders conveys the importance of both the individual's and the organization's core values. These leaders also reveal the significance they bestow on having

their own values align with those of his or her respective organization. Bolman and Deal (2013) underscore the importance of values to the organization in this description:

> Values characterize what an organization stands for, qualities worthy of esteem or commitment. Unlike goals, values are intangible and define a unique distinguishing character. Values convey a sense of identity, from boardroom to factory floor and help people feel special about what they do. The values that count are those an organization lives, regardless of what it articulates in mission statements or formal documents. (p. 255)

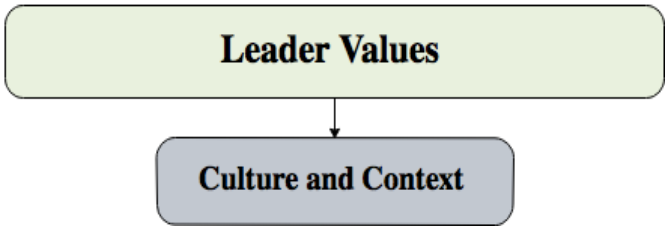

Figure 5.2. The influence of culture and context.

Culture and Context

In the mid-1980s, Pettigrew began an extended critique of the research on organizational change, suggesting a general absence of contextual issues in the change literature (Pettigrew, 2012). Higgs and Rowland (2011) argue that Pettigrew's findings reinforce the broader issues in relation to strategies for change implementation when operating within global organizations. Kramer and Shuffler (2015) elaborate on the importance of taking global contexts into consideration by drawing in concepts from culture research and questioning how different global environments may alter descriptive norms in a leader's sensemaking process. In the review of the literature examined was the notion that cultural and organizational context (contextual issues) significantly influence a leader's sensemaking and sensegiving, thereby supporting the authors' underlying assertion that cultural and organizational context matters. In the following excerpt Allen marvels at the power and influence of organizational culture at WAFI headquarters in the

US, and at the challenges of navigating change in WAFI global offices, influenced by their respective cultures, in 40 different countries around the world:

> I was just talking to colleagues about this today, the fact that practices and attitudes and even belief systems within a bureaucratic structure, if you will, are passed on as a culture long after those people are gone. Their fears, their hopes, their beliefs of seemingly mundane things, …will be passed on even to new employees. So when I'm think about change I'm thinking we really need to focus on those people who have been here and get them to understand why we need change. We don't need to focus on the new people because they will just embrace it. Wrong! Wrong! Because somehow that culture has been passed on. …You know one of the things and I still talk about it, I don't harp on it but I have put it in job descriptions here. Something that I learned in Peace Corps, and that was a high tolerance for ambiguity. Right? That was our thing, because I thought that would require, and I would be really clear with people that I hire that you must be flexible in the following ways. So we work in forty different countries and that phrase in this environment is interpreted in so many different ways. So some cultures embrace that, embracing of change. Others will resist is no matter how well explained. Some of our offices are willing to accept, you know, the CEO wrote a memo, so whatever you are doing just change because he said so. Other offices will always want to translate into what's in it for me. So all change will be put through a filter.

In the following description Leana discusses the challenge of leadership in the context of a heavily bureaucratic organization whose mission it is to support the military:

> It's always about the mission first. Execute the mission. You can't do it when you've got people fighting, with you with everybody. And you also have to know what to do with people that are dysfunctional. . . . The challenge, it's people, managing people, and the interesting thing is when I talk to my colleagues it's always the same. That's their challenge too. Managing the people, getting them to do what needs to be done. We all have that as a challenge. You know, you are accountable. We are here, my colleagues and I, we are the technical experts, we have the degrees, the experience, you were selected because you are the crème-dela-crème, but you don't have the crème-dela-crème staff. You just have to work with what you have. I did learn that from the Veterans Administration, in my last job an SES, she said, Leana, you have to work with what you have. You can't pick your staff, you can't fire everybody, you just have to work with what you have. EEO has historically been a dumping ground and so people that don't work in other areas, what are you going to do with them? People are going to file a complaint, so what do you do? Put them in EEO.

To implement organizational change one must, as leaders in this study have espoused, understand the "DNA" of the organization and begin where the organization exists. They must know where the organization stands; they must comprehend its culture and context. Leana's

comments speak to leadership and change in a highly structured, hierarchical organizational system with specific challenges that most leaders never experience. When Leana was asked about the process of change she responded, "You have to plant seeds, you have to take it one little step at a time."

The organization's core values and strategic framework are the foundations for their cultures, and it is the culture that supports the work and mission in the organization, irrespective of its immediate context:

> There's the culture of the place, of the country but then we also, you know in terms of how you, actually tomorrow I have a what I call a CEO roundtable on culture of WAFI So we have to create an internal culture across cultures and across languages. So some people say we don't do that in China, but we do that in WAFI China. We don't do that in Kenya, but we do it in WAFI Kenya. . . . There will always be differences, but there is a strong culture here and it's one of engagement.

In the passage above Allen conveys the importance of creating a strong organizational culture—encompassing core values—that can withstand the societal cross-cultural forces that may be working against the organization's change mission.

Contextual variables. In the process of leading change Higgs and Rowland (2000) cite the key contextual change variables as (a) magnitude, (b) source, (c) speed, and (d) impact on those in the business. In the following scenario contextual factors had a negative impact on organizational behavior. Facing the realities of a new digital era, Pat describes leaders' behaviors at a national newspaper as they grappled with a fast-moving (speed), large-scale (magnitude) change imposed externally (source). The following excerpt illustrates the impact of the change on those in the organization:

> So the behavior in the organization was fraught, just fraught with all kinds of not really great behavior. . . . Then you would have people like me who would play the honest broker and call bullshit when you saw it, and let them know that people are actually pretending and they are working together but they are actually undermining each other at various stages. Then I would meet with people like the president of the newspaper

> individually and say okay, actually what you are doing, you are pretending to be collaborative but xyz is happening and you aren't actually being collaborative, and these are the real actions, things that are happening and you are undermining the integrity of what is happening. . . . The greatest challenge was the person who was running the newspaper, because that person I felt could never see above roles in terms of being territorial and not seeing the future, and not really working for the greater benefit of the whole. Who I think for everybody in leadership it is their responsibility to do.

Note the often-espoused position that leaders must work "for the greater benefit of the whole."

The discussion on context in this section points to the inherent paradoxes leaders of change in complex systems routinely face. Leaders grapple with contradictory challenges that can polarize organizations; they are the choices that present strategic paradoxes that create constant tension and cannot be fully resolved. They are the paradoxes that magnify complexity and reveal underlying assumptions. Smith, Lewis, and Tushman (2016) propose a solution:

> Managers need to shift from an 'either/or' mindset to a 'both/and' one by seeing the virtues of inconsistency, recognizing that resources are not always finite, and embracing change rather than chasing stability. In practical terms, this means nurturing the unique aspects of competing constituencies and strategies while finding ways to unite them. (p. 65)

The following segment introduces sensemaking in informal systems and follows the path of the Change Leadership Framework through the sensemaking process.

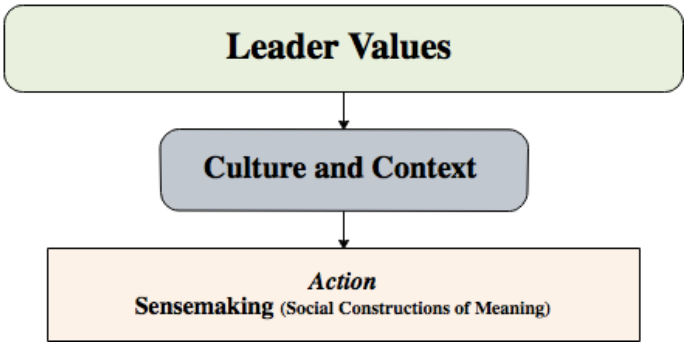

Figure 5.3. Leader sensemaking framework.

Sensemaking and Informal Systems

Humans need meaning; they need to identify, to label, to understand, and to be able to make predictions about the people and objects in their world (Moskowitz, 2005). Leading change in complex systems is essentially a thinking, sensemaking, and sensegiving endeavor, which supports Maitlis and Christianson's (2014) definition of sensemaking as "the process through which people work to understand issues or events that are novel, ambiguous, confusing, or in some other way violate expectations" (p. 57).

Sensemaking in organizations is a fundamentally social process where individuals interpret their environment in and through interactions with others, constructing accounts that allow them to comprehend the world and act collectively (Isabella, 1990). With regard to a leader's sensemaking and sensegiving during organizational change, Gioia and Chittipeddi (1991) argue that sensegiving is "concerned with the process of attempting to influence the sensemaking and meaning construction of others toward a preferred redefinition of organizational reality" (p. 443). Similarly, Isabella argues that leaders appear to be at the heart of cognitive shifts that occur during change. Sensemaking and sensegiving are thoughtful and reflective processes, requiring a leader to understand and work with both formal and informal organizational systems. It is through sensemaking, as characterized by non-linear thinking, as opposed to "prescription" and its tendency toward linear thinking, that leaders can develop a nuanced understanding of the nature and impact of underlying organizational systems. Therefore, sensemaking in the context of the whole system is perhaps more important than prescription in order to achieve the required change (Higgs & Rowland, 2010; Stacey, 2001; Weick, 1995).

To appreciate the importance of leader sensemaking in complex systems, one might consider dialogue as a process of employee engagement and informal systems as a rich environment for creativity and innovation. In complex adaptive systems, self-organization happens most readily in the informal systems where there is no central leader and the conditions for creativity and innovation may be strongest (Stacey, 1996). Out of such informal systems emerge the capacity for an organization to evolve creatively rather than from within formal systems that have a tendency to think in terms of moving from one intended state to another (Shaw, 1997; Stacey, 1996). In the following passage Jerry shares his "theory of management" that values the informal system:

> Well this is how I feel, this is my own theory of management, it's the informal networks that run organizations, not formal networks. Knowing the organization chart tells you nothing about what is going on. And everyone tries to knock out these informal cultures, right? And I say well that's kinda crazy, why would you do that? So I'll tell you a story: We have these meetings all the time and in those meetings we often have food and if you see these are glass spaces. So at the end of the meeting they'll take the food out and put in the little kitchen back there, and within a minute everyone will be there, and I said how is that possible? And it turns out the guy who sits next to the kitchen has a list serve and he would tell everyone. Of course, I was resentful I wasn't on the list serve [laughing] so you learn the power of these informal networks and you say, let me use those, let me encourage it and so that's why people know things. If I would call you into my office and yell at you, which I've never done, but I guarantee you everyone would know within five minutes. So why fight the informal networks, why not use them to send out the messages you want to send.

To effect change all of the leaders in this study employed mental schemata built on their experience, personal values, and organizational context to engage in sensemaking and sensegiving endeavors. In other words, they engaged in thinking and strategizing processes that involved making meaning and creating new frameworks intended to change modes of cognition and action to enable organizational members to adapt to the intended change. As Allen demonstrates in the following sentence:

> My management style is one where I like to expose different thoughts and beliefs about all sorts of things in a very transparent way, thinking that if you discuss something openly and no matter how uncomfortable it will create confidence.

Sensemaking, critical to the change endeavor, is a cognitive social process—thus a social construction built on organizational interdependencies—that helps leaders process ambiguity and construct stability in an ever-changing reality. It is a cognitive process that involves the active authoring of events and frameworks for understanding, as people play a role in constructing the very situations they attempt to comprehend (Weick, 1995). In the following passage Pat describes the challenges of sensemaking and sensegiving at a national newspaper during the transition from a strictly paper product to the digital age; a change that threatened the identity and authority of many in the organization:

> The people that were part of the newspaper, the print product, were hostage to their beliefs because that is where their economic and knowledge base put them, and they weren't able to see where the newspaper needed to go for territorial reasons. Right? So you have one layer of groups of people trying to figure out what to do and how to do it, and they were all siloed and fighting through their own perspectives on what needed to happen. . . . the actual CEO, actual publisher, actual chairman, board of directors, right and where they thought everything needed to go. Think about the chairman the CEO, types of people and trying to influence them to give them direction. In terms of a change effort, trying to persuade them and give them direction to help guide people underneath them on where to go. I won't say, I guess in the end it was successful, but it was a long arduous, difficult, bloodied (laughing) change initiative. There were just, uh it was really difficult.

As reflected in Pat's story, sensemaking and sensegiving involves an attempt to change modes of cognition and action to enable an organization to continuously adapt, take advantage of important opportunities, and/or cope with environmental threats (Gioia & Chittipeddi, 1991).

In a formative work by Ralph Stacey (1996), *Complexity and Creativity in Organizations,* Stacey explains what the science of complexity is and demonstrates how it applies to human systems. Furthermore, in a discussion on the internal structure of agents, Stacey (1996) outlines

the following as a key aspect of the structure of human agents in an organization that echoes Weick's description of leader sensemaking in complex adaptive systems:

> The agents are capable of systemic thinking, that is, of observing, reflecting upon, and altering behavior according to their perceptions of the operation of the whole system of which they are a part. This amounts to an ability to reflect upon themselves and take up the role of both participant and observer. It is the property of consciousness and self-awareness. (p. 34)

Stacey asserts that self-organizing processes are to be found primarily in an organization's informal systems, comparing these to the "paradoxical" conditions found in "bounded instability" discussed in section two, the literature review. Shaw (1997) draws from Stacey's work to emphasize that taking a Complex Adaptive Systems (CAS) perspective provides a "radically different way of conceptualizing how organizations change," shifting attention away from planned change to the processes of self-organization that produce emergent change found primarily in the organization's informal or "shadow" systems. Moreover, Shaw (1997) supports Stacey's argument that "social systems can be thought of also as complex adaptive systems in which agents may be individuals and groups interacting in co-evolving sensemaking and active contexts" (p. 238).

A critical point regarding leader sensemaking in complex systems that emerges from the data is the premise that leadership combines a continued focus on core values and strategic framework with the power of formal and informal systems to create and realize organizational change. Moreover, crucial is the leader's ability to focus the power of the informal system on institutional goals through a complexity-style leadership approach, as demonstrated by characteristics such as collaboration, respect, innovation, shared leadership, and leveraged ambiguity that create the foundation for a change-ready, adaptive organization. Stacey (1996) warns that if the leader's role is formerly established and sustained by fear it is likely to serve as

a block to learning and creativity in a potentially adaptive organization. Seemingly, in support of Stacey's assertion, Higgs (2003) makes a compelling argument for the adoption of a sensemaking paradigm as a means to identify a model of leadership, "which is relevant to the context of complexity and change facing organizations in the early twenty-first century" (p. 273).

Leadership Approach

The following section describes three leadership approaches that emerged from the data. These categories—traditional, complexity, and complexity-plus—are conceptual in nature. Many leaders, including those in this study, demonstrate characteristics of all of these approaches but exhibit a proclivity toward one. The following is a story about three distinct categories of leadership that do, indeed, overlap. Yet, each leader's story reveals an undeniably strong emphasis in one of the leadership approach categories. The critical point is not the overlap, but rather the distinction. The importance lies in how the emphasis of each of these conceptual categories impacts those they lead, and the positive (or negative) influence such distinctions might generate.

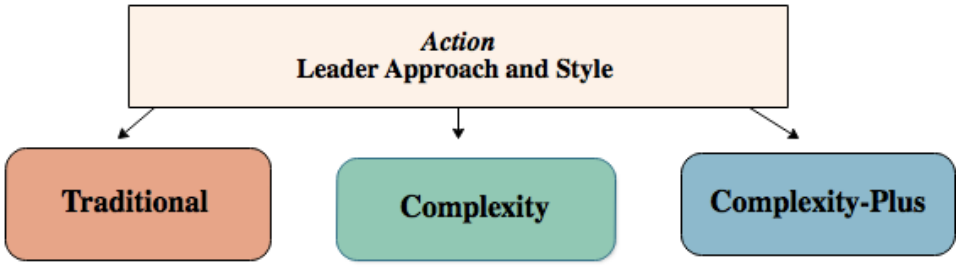

Figure 5.4. Leading change framework: leadership approach.

As illustrated in Figure 5.4, three categories of leader approaches to change were revealed in this study: (a) Three of the 20 leaders disclosed a traditional approach, essentially linear and hierarchical in nature and emanating from the notion that only they had the true intellectual capacity, talent, and/or responsibility and authority to make appropriate decisions for

the organization and its members. (b) Fourteen of the 20 leaders revealed a emergent-based, complexity approach, a term originating from complexity theory, valuing an egalitarian and emotionally safe organizational environment built on commitment, respect, and trust, emphasizing the need to acknowledge, hear, and support members as valued contributors at all levels of the organization. Significantly, these complexity-style leaders demonstrated a willingness to make professional "sacrifices" or allowances for the good of the organization and its members. (c) Finally, in the emergence of an unexpected third category, three of the 20 participants revealed a complexity-plus approach, distinguished from the complexity-style leaders by an "expansive vision" or a desire to think and act beyond conventional boundaries. This group proved similar to the complexity leaders but with varying instances of complexity characteristics, such as humility and shared leadership. Moreover, this group's aspirations for change were qualitatively different than those of the complexity group; their visions went beyond their own organizations and social systems. These leaders demonstrated the desire and capacity to make decisions for themselves and the organization based on their aspirations to achieve something beyond the confines of organizational and social norms, an achievement for the good of society and, for the world. In essence, through their individual organizations each of these leaders were trying to affect social change; each was trying to make the world a better place. It was interesting to note that these leaders had significant global experience and each revealed having had intense experiences in their youth and/or involvement with social activism in their young adulthood.

Characteristics of traditional leadership. The traditional-style leaders in this study emphasize their own capacity to shape a vision and drive the organization's goals, rather than to seek significant, real-time input and participation from others. The leaders in this category

sought to attain support and collaboration, but did not appear to share significant leadership opportunities with staff. They were not indifferent to the development of the organization's members, and, in fact, one mentioned the importance of mentoring while another professed to take pleasure in the success of others. However, the focus of the three leaders in this category appears to be on their own intellectual capabilities and/or the "authority and responsibility" bestowed on them—by virtue of their leadership position and expertise—to make important decisions and shape the path and future of the organization. This was the common thread, as well as the most significant and distinguishing characteristic among the traditional-style leaders in this study.

In the following excerpts Howard, Lawrence, and Bob express their views about the strategy roles they play in their respective organizations:

> We have to co-create this but at the end of the day nothing is co-created. It's co-contributed but I have to come up with that vision. At the end of the day I have to articulate that vision, I want their contributions not only factored in but I want them to hear it when I articulate the vision. But I can't be so obsessed that I lose site of the fact that it's my responsibility and again, that is a little bit of a dance back and forth. It's our budget it's our vision, and it's why I've also, one of the great things you can do, when you bring them [leaders] in new, you get them a good team that gets behind them.

> You have to know how far people can go during the exercise [strategic planning] in terms of making a real and material contribution to it. The answer is not that far, because you know you don't have a lot of people who can bring a global perspective to the institution and really operate intellectually at that level. They may not feel by virtue of their position within the organization they are empowered to do so, they may not be accustomed to do that. They may not think that way. There are all sorts of different learning aptitudes and skills, and people who have very little experience, generally speaking, in terms of strategic planning. So the director, I think at least in my experience, in order to ensure that the utility of the strategic plan has to play a catalytic role in shaping it and planning it. If you care about it and what it contains then you have to put your time and your energy into making it happen so then truly a lot of the work of the institution is going to have to be generated by that or aligned itself with that, and unless you are willing to put the hard work into shaping that conversation and making those decisions to create the alignment, to create that new work that fulfills the strategic vision, it's not going to happen.

> I think I very much play to that notion of accepting the invitation to assume the responsibility and indeed the authority that has been given to me for the period of time that I hold a job that is a leadership position. I've always embraced responsibility of what it is I've been asked to do. . . . This concept of should a leader be the spokesperson for the organization? Should they be the front person for their organization? Obviously they should be the chief futurist and strategist.

Although there is overlap between the approach categories, the leaders whose behavior emphasizes a traditional approach appear to appreciate a sense of entitlement derived from their experiences, and from the appointments to their respective positions. It seems they begin from the premise that only they have the background, intellectual capability, and authority to shape a vision, make appropriate decisions, and ensure the organization's success. If we consider an organization to be a complex system, leadership and change take on new dimensions. Increasingly, leadership theorists point out that self-organizing principles explicitly reject cause and effect, top-down, command-and-control styles of leadership (Burnes, 2005; Stacey et al., 2002; Wheatley, 1992).

Based on my consulting experience and the results of this study, I posit that the most serious consequence of a leader-centric approach is the inability to effectively create emotionally safe and supportive environments, where organizational members feel respected, valued, supported, and, importantly, are then able to develop a sense of safety and egalitarianism that fuels their ability to make significant contributions. If the leader of the organization truly believes members are not as "intellectually capable" as he or she is, or do not have the expertise, then how or why would that leader, implicitly or explicitly, work to create an environment for others to contribute as equals? From the confines of this mental schema is it possible to bridge the divide and fully engage organizational members? Knowles (2002) points to the likely outcomes of a "closed" management style:

> Incoherence in strategic leadership processes occurs when the leaders and managers are restrictive, closed, and exclusive. . . . When people have a good, shared sense of the organization's identity and culture then increased flexibility and expanding roles become quite effective. (p. 21)

Schein (2013) underscores the need for leaders to adopt a humble approach "because complex interdependent tasks will require building positive, trusting relationships with subordinates to facilitate good upward communication. And without good upward communication, organizations can be neither effective nor safe" (p. 5).

In a study of leadership behaviors and change success, Higgs and Rowland (2005) found that leaders behaving in a way that focused on meeting their own goals and needs rather than serving the purpose of the change led to change failure. For the traditional-style leaders in this study, the core focus appeared to be inward. If we consider that the leaders' personal values might be focused primarily on their own achievements and, perhaps, glorification, then these individuals would have reason to place an emphasis on building a platform for their own professional success. In this scenario it might be understood that the organization's success is contingent upon the leader's achievements, and organizational members serve primarily as instruments of the leader's intentions. Given these mental schemata, there is a possibility that organizational members would not be offered the opportunity, the support, or the kind of emotionally safe work environments they would need, as noted in an excerpt above, to "operate intellectually at that level."

The critical importance of emotionally safe work environments for organizational health, creativity, and innovation was a common theme among a majority of the complexity leaders in this study. Their focus on creating a non-retaliatory atmosphere for organizational members is supported in the literature. According to Galbraith (1982), "safe spaces" have been identified as being important for innovation ever since the notion of innovative cultures became part of the

business landscape. Dombrowski et al. (2007) argue that the "intrepid people who put their careers at stake and take enormous risk on behalf of their organizations in making innovations successful are capable of doing so because of the support they receive from their leaders" (p. 191).

Characteristics of complexity leadership. The complexity-style leaders in this study were driven by a desire to achieve a "greater good" for their organizations and the people who populate them. Importantly, they were willing to forgo potential professional gain—such as political expediency, protection of position and authority, increased compensation, or temporary strategies to increase company or a company division's profits—to achieve shared organizational goals. In the following passage, Russ felt strongly that he, and leaders like him, should "be willing to get fired tomorrow" otherwise he wasn't doing his job:

> As a senior leader, . . . if you are getting paid what I get paid or any of my colleagues you should be willing to be fired tomorrow. If you aren't willing to do that then you are not going to make the right decisions. I was with a great leader yesterday and this gentleman is running an 11 billion dollar business and I spent several hours with him. And you know he's not sure of his job, but his motivation is "I want to be sure my team and my people, all 10 thousand of them, are well. That this transition goes well for them. Once I know that then I will worry about my future." That was his view.

Largely in contrast to the traditional leadership style, this group emphasized the importance of getting members' feedback and input on important organizational decisions, the need for diverse perspectives, and the importance of bringing people along even when full consensus could not be achieved. Complexity leaders focused on value and respect for all organizational members and on supporting their ability to contribute to the growth and development of the organization. This notion is expressed below in three sample excerpts from Tim, Jake, and Christine:

> I've always been a big believer that you need to seek input and understanding and that you know . . . you have your biases or your perceptions that you feel may be the answer

> or the direction but I'm a firm believer in really getting input and feedback. I'm not an autocratic leader by any stretch and uh, cause I recognize that I don't know everything and I want to get good measured feedback for decision-making. I'd say with my staff I'm inclusive. I do recognize though that there are times in leadership, and it's tough when you get the feedback and like most things in life there's not always a consensus. And in your leadership role you then have to make the call, and it may not be the popular, or it may have a lot of support so it's an easy decision. Regardless, I think it's important to be inclusive and make sure that you seek feedback and input from others.
>
> That's my style I think, to keep listening and talking to people. Try to provide the thrust but keep including more people because they all know more than I do. And learning from other people about the big issues and about the history that went with them. That's really crucial, the culture of the organization. So my little formula, I call it concentric circles, is just very simple. Identify the problems, confirm them or alter them, or adapt them or nuance them until the problems are clear, gather a bunch of people, get them to believe in or agree with the problem. Start to consider solutions and keep broadening the circle, and often times some aspects of where you are going will change because you are involving more people. You come across incredibly wise people who suddenly change the whole game. Just because they, in five minutes time relating a story, you go, oh, now I see.
>
> It was an "us and them" that had developed over fifty years of bureaucratic process, and that's what happens if you don't build in change and feedback, it is that the organization and bureaucracy as it has been established becomes the goal. Rather than, you lose site of the fact that really the main goal is supporting our volunteers. So we had to bring ourselves back to we are a volunteer centered organization. … There are times when we make decisions that the volunteer doesn't like or doesn't want, but we have got to make sure the decision is in the volunteer's best interest. If they don't like the outcome at least they feel that they've had a voice at the table and they were heard and understood and respected and then a decision was made. . . . We had to have a pretty tough process, series of processes that involved everybody in our agency about questioning so many assumptions that we had been living with for a very long time. . . . We had to step away, and not take it personally, and listen and then be willing to change how we thought about things and be willing to say, I might not have been as volunteer centered as I could have been.

As evidenced in these passages, emphasis is placed on hearing diverse organizational perspectives at all levels. Giving everyone in the organization the opportunity to share their opinions and, even if participants do not agree and consensus is not reached, everyone has had the opportunity to be heard and respected. Rather than valuing or placing an emphasis on one's own position, experience, and capability—in other words, assuming that "leader knows best"—

there is a willingness amongst this group to change perspectives on a given issue should the information gleaned warrant doing so.

Weick et al. (2005) underscore the centrality of organizing through communication in the sensemaking process. They remind us that sensemaking is not about truth and getting it exactly right. "Instead, it is about continued redrafting of an emerging story so that it becomes more comprehensive, incorporates more of the observed data, and is more resilient in the face of criticism" (p. 415). A crucial sensemaking skill of the complexity style leader is their ability to hear and value the opinions and ideas of others, and to confront criticism with respect and an open mind with express intention to genuinely listen and objectively evaluate the critic's meaning. As expressed in the message Christine shared:

> I learned that you've got to confront your critics and listen to them with respect because some portion of what they say, maybe 100% is truth, some of it might be just different versions of reality from different perspectives, but you have to listen to your critics with respect.

As conveyed above, changing one's mental models—adapting—is a challenging endeavor requiring the leader to accept opposition and not to take criticism personally. The ability of a leader to suppress ego, listen with respect, and alter or modify one's own mental models based on nuanced sensemaking that leverages the organization's formal and informal systems is an important adaptive function, and a critical skill in today's organizations.

Like Christine and her critics, the notion of adaptation from the perspective of CAS involves a number of agents each embodying active information in the form of schemas. Through their interaction the agents create mutual influence and, as a result, both the behaviors and the schemas themselves are continuously revised in the light of experience. In other words, they are adaptive (Shaw, 1997). Increasing complexity in our environments presents what Heifetz (1998) refers to as "adaptive challenges" in which it is not possible for any single person

to define a problem and know the solution. Instead, adaptive challenges call for collaboration among organizational members and stakeholders who each see a different aspect of the reality, and many of whom must themselves adapt and grow if the matter is to be addressed effectively.

Justice Potter Stewart on pornography. As the complexity leaders in this study often noted, there comes a point in the process of deliberation or "toward consensus building" that a leader must make the final decision. This can be an especially difficult task if general agreement cannot be reached or if the leader himself or herself feels strongly on a particular issue with little to no agreement. Following is Matt's response after being asked about the right time to stop the consensus process and to make a decision:

> So, it's Justice Potter Stewart on pornography "you know it when you see it." [laughing] It's not defined necessarily. It's issue specific on some things, and I think one weakness I have is letting things go on too long. You think you're going to find a solution or other priorities, or it's just hard for whatever reason. You can always justify a punt on some decision. Then the other piece of it that I've learned, I hope, from the years is that sometimes you should trust your first instincts. At Peace Corps, for example, when I started there at the very first, someone mentioned the idea of short-term assignments, not the two years. Then you bring the idea to an organization like the Peace Corps and there are 50 reasons why it's a bad idea and can't be done. Even with a change friendly place like the Peace Corps there's a lot of orthodoxy, so I thought okay I must be wrong. Then you keep going cause it was under my bonnet and that became the Crisis Corps, which is now Peace Corps response, short-term assignments. And now Peace Corps has short-term assignments! Peace Corps response, in our time together, Crisis Corps was the beginning of it, but if I had to do it all over again I would have started it much sooner, but I was told it was a bad idea by so many. Theoretically, there is a reason why you are named to some position. Some board, some group, someone felt you had the judgment and the confidence in that appointment to allow the justification for your first instincts, and I suspect there is a little imposter theory to every leader, but leaders should also remind themselves. I think of that initial appointment and it didn't come with full understanding of every issue. Judgment, and character, and skill set and all that has to be brought to bear in leadership roles. In whatever I go on to do next I hope I'll take that lesson.

With a participatory approach and strong egalitarian sensibilities, the complexity-style leader stands in contrast to the single "hero-leader" model dating back to the industrial era. As outlined in section two, according to Uhl-Bien et al. (2007), leadership models of the last century

are effective for an economy premised on physical production, but are not well-suited for a more knowledge-oriented economy. Lichtenstein et al. (2006) see traditional, hierarchical views of leadership as less and less useful given the complexities of our modern world. The critical question then, lies with the complexity model's capacity to meet the challenges of navigating in the knowledge era. Is it a leadership approach suitable to facilitate the complexity theory constructs of self-organization and emergence discussed in the review of the literature? Is it an approach that can move us from the single leader to a paradigm that leverages shared leadership, whole systems thinking, and the rich interactivity of the system's agents?

This question poses yet another "both/and" paradox and it illustrates the utility of the Leader Values Framework as integrated with Uhl-Bien et al.'s (2007) Complexity Leadership Theory (CLT) model. That is, within the organization's guiding core values and context the leader adopts and supports the appropriate leadership function as either administrative, enabling, or adaptive. Therefore, in contrast to the hero-leader model, I believe that the answer to the question of complexity leadership is affirmative. However, a general consensus—if not a warning—from among leadership theorists converges around the lack of explicit discussion of leadership models for the knowledge era (Lichtenstein et al., 2006; Plowman & Duchon, 2007; Uhl-Bien et al., 2007).

Characteristics of complexity-plus leadership. A surprising outcome of this study was the presence of the complexity-plus leader. This category represents an individual who, generally speaking, adopts a complexity approach (with an appreciation for equality and collaboration) but also demonstrates values that drive him or her to seek and affect broad change externally, for the good of society. In the case of the three complexity-plus leaders who emerged from this study, intense experiences in their lives influenced their values and lead them to think

and operate based on a broader level of cognition, one that takes them outside of the immediate organization and into the realm of society, activism, and beyond. The distinguishing characteristic for these leaders is their desire to move beyond organizational and social norms to cultivate more expansive goals, rather than to focus primarily on the success of the organization and wellbeing of its members. The expressed intent of these leaders was to make a larger impact, to succeed at a broader social level. As described by Jerry, Allen, and Jack in the following three excerpts:

> I think that I am probably pretty different than most of the leaders you are speaking to. I don't know if I would ever be picked as a leader. I have always been interested in social change. Actually, I think I pretty much backed into that. I was a product of the 60s did some antiwar stuff. . . . The other thing early on, JPA was pushing to hire people from the country we work in, so most of our global people are from the country we work in. So we are pretty up front with funding agencies who up front say they want development but then they want white guys running things, and we say no, no we aren't going to do it that way. We actually almost lost a couple of contracts because of that. I go out to talk to people, the fact that you are from Ethiopia we aren't going to treat you any different. And people appreciate that. . . .We've been offered a lot of money to sell out and I won't do it. I'd make a huge amount of money and certain people here would make huge money. Because JPA is partially profit making and partially non-profit, but I wouldn't do it. No, I want to perpetuate the way this organization works, that's important rather than just a financial gain to it. So I wouldn't compromise on that. I mean I'd prefer to go and lose everything than to sell out.

> Yesterday one of my staff said to me that I find it charming that you are still surprised by things (laughing) but I think if I'm not learning I will die, and I'm veracious. And I do have problems when I see people who are not curious. So I'm developing a talk and I hope to turn it into a book on conservation, curiosity, and human intelligence. You know that was a great leap forward, fifty thousand years ago, in human intelligence art, music. And why did it happen? We don't know why it happened but my feeling is if we don't have another one then we're going to lose everything, right? So not fighting against something but fighting for something, because otherwise you are literally watching the demise and you are accurately cataloguing.

> At a personal level I look at leadership as a long haul game. I never wanted to be a leader in the short haul, higher up in the organization. Uh, the quote that I tell people all the time when I am counseling and advising them and they are going crazy, and they are often women who triple task and take on more than they should, I often say that institutions have no memory. Think long and hard about what you want, what your skills are, where you want to go, but don't do it for the institution. First of all, they won't remember you.

> More importantly, institutions have been around a long time, they have strong edifices and it's very hard to change an edifice that is already built, so try to look for opportunities outside that.

In supplement of the comments documented here, each of these three leaders expressed their interest and demonstrated their intent to affect change beyond their organizations.

One might imagine that historical leaders such as Abraham Lincoln, Margaret Sanger, Martin Luther King, Jr. and contemporary leaders such as Barack Obama, Mark Zuckerberg, and Sonia Sotomayor represent a version of the complexity-plus leader. These are individuals who were famously able to step outside of social and organizational norms to transform society and, perhaps, change our world. From a researcher and practitioner perspective, to understand the individual sensemaking and leadership approach of such extraordinarily successful leaders one might consider developmental psychology.

Developmental psychologists, Rooke and Torbert (1998) link the ego development stage of the leader to successful organizational transformation toward becoming a learning (adaptive) organization. In what the authors describe as their "retrospective sense-making hypothesis" they describe the outcome of their longitudinal research on leadership development:

> CEO's whose cognitive emotional structure recognizes that there are multiple ways of framing reality and that personal and organizational transformations of structure require mutual, voluntary initiatives—not just single-framed, hierarchical guidance—are more likely to succeed in leading organizational transformation. (Rooke & Torbert, 1998, p. 11)

The authors note that leaders in their study who were successful in transforming their organizations had a cognitive-emotional structure (based on a seven stage continuum) characteristic of rare, late-stage leaders. In their seminal work, *7 Transformations of Leadership*, Torbert and Rooke (2005) assert that what differentiates leaders is their psychological development levels, what they call a leader's internal "action logic," or how they interpret their

surroundings and react when their power or safety is challenged. It is evident from the data in this study that the three complexity-plus leaders were characterized by their intent and ability to step outside of organizational and social norms to affect change. However, the psychological development levels of these leaders were not identified, but may pose an interesting question relevant to this discussion.

Leadership Approach: Style Continuum

The results of the research indicate the leadership approaches vary according to individual values and organizational culture and context, and are therefore best represented in terms of a continuum rather than a dichotomy. Figure 5.5 places the leadership approaches to change that emerged in the findings of this study on a leadership style continuum. The continuum begins with a traditional leadership style that is hierarchical and linear in nature. As noted in Figure 5.5 below, the traditional-style leader has an inward focus; organizational success is measured by the individual leader's success. Moving toward the right on the continuum, the complexity style approach embodies an organization and member focused approach. The emphasis in this category is on inclusivity and accomplishing the greater good. The continuum ends with the complexity-plus leader, an inclusive approach that seeks to make an impact beyond the traditional norms of the organization and society. The focus in this category is thinking beyond traditional norms, with aspirations for global change.

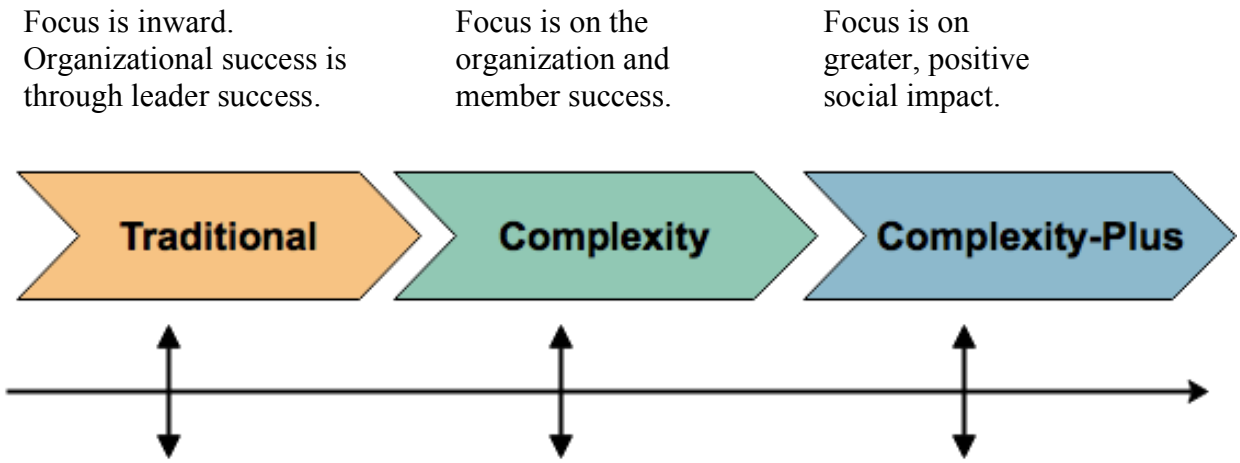

Figure 5.5. Leadership-style continuum.

The leadership-style continuum, in essence, reflects an adult meaning-making system. Though focused on change approach the continuum might be compared conceptually to Kegan and Lahey's (2009) three plateaus in adult mental development. According to the authors, three adult meaning systems—the socialized mind, the self-authoring mind, and the self-transforming

mind—make sense of the world and, as in the leadership style continuum, operate within it in different ways. Table 5. 1, describes the three plateaus:

Table 5.1

Kegan and Lahey's Adult Plateaus

The socialized mind:

- We are shaped by the definitions and expectations of our personal environment.
- Our self coheres by its alignment with, and loyalty to, that which it identifies.
- This can express itself primarily in our relationships with people, with "schools of thought" (our ideas and beliefs) or both.

The self-authoring mind:

- We are able to step back enough from the social environment to generate an internal "seat of judgment: or personal authority that evaluates and makes choices about external expectations.
- Our self coheres by its alignment with its own belief system/ideology/personal code; by its ability to self direct, take stands, set limits and create regulate its boundaries on behalf of its own voice.

The self-transforming mind:

- We can step back from and reflect on the limits of our own ideology or personal authority; see that any one system or self-organization is in some way partial or incomplete; be friendlier toward contradiction and opposites; seek to hold on to multiple systems rather than projecting all but one onto the other.
- Our self coheres through its ability not to confuse internal consistency with wholeness or completeness, and through its alignment with the dialectic rather than either pole.

Note: Adapted from Kegan and Lahey, *Plateaus in Adult Mental Complexity*, 2009, p. 17.

Complexity Leadership Theory: a contextual model. Complexity Leadership Theory (CLT) from Uhl-Bien et al. (2007) presents a three-function model of complexity leadership with three distinct functions engaged according to organizational context: administrative, a traditional style focused on results; adaptive, with a focus on learning; and enabling, or creating the conditions for adaptive behaviors to flourish.

In the Higgs and Rowland study from the dissertation's introduction, a line is drawn connecting the constructs of shaping, framing, and creating capacity to Uhl-Bien et al.'s (2007) three function model: administrative (shaping), enabling (framing) and adaptive (creating). The results of the Higgs and Rowland study support the notion that these constructs are important to leadership and leading change in complex adaptive systems. The same was evident in this research. As demonstrated by the leaders here, there are times when, while working from an enabling and adapting platform, and within the organization's core values, the results orientation of the administrative function comes to the fore and plays an important part in organizational success. Jerry reveals this position in his comments to the staff of a newly acquired non-profit:

> So, I literally say to them, "okay, now your job is to do the programmatic thing but also you have to know the business model behind it and I'll get you help if you can't read a spread sheet. I'll get you help to do that, but you have to do that, you have to change you have to understand that this is a business, and if you just want to be a pure development person and don't want to do that then go someplace else." If you don't want to do government contracts, I said, "I just don't know how to fund this unless we have a portfolio that has government contracts." So it was uhm it took a while for them to get it. Fortunately, because JPA was around people could see it and say that seems to work and see that people seem to be happy.

As noted in this work's introduction, the results of the research support the notion that the intent of complexity leadership is not to replace traditional leadership roles, but to enhance them, making leadership more relevant and viable in the knowledge era (Lichtenstein et al., 2006; Marion & Uhl-Bien, 2009; Schreiber & Carley, 2006).

Figure 5.6 is a contextual model that illustrates the three CLT roles (administrative, enabling, and adaptive) as influenced by individual and organizational core values, and by environmental and cultural contexts. Guided by core values and organizational context, leaders move between the three CLT functions, as the situation compels. The leader values framework integrates the findings from this study, highlighting the role of core values alongside internal and

external contexts and their interaction with CLT's three leadership action functions. The model depicts the importance of the values identified in this study, their relationship to context, and the influence these have on leadership behavior and change approach. The framework is a contextual model that draws from complexity science to create a leadership paradigm that focuses on enabling the learning capacity of Complex Adaptive Systems (CAS) as guided by core values within knowledge producing organizations.

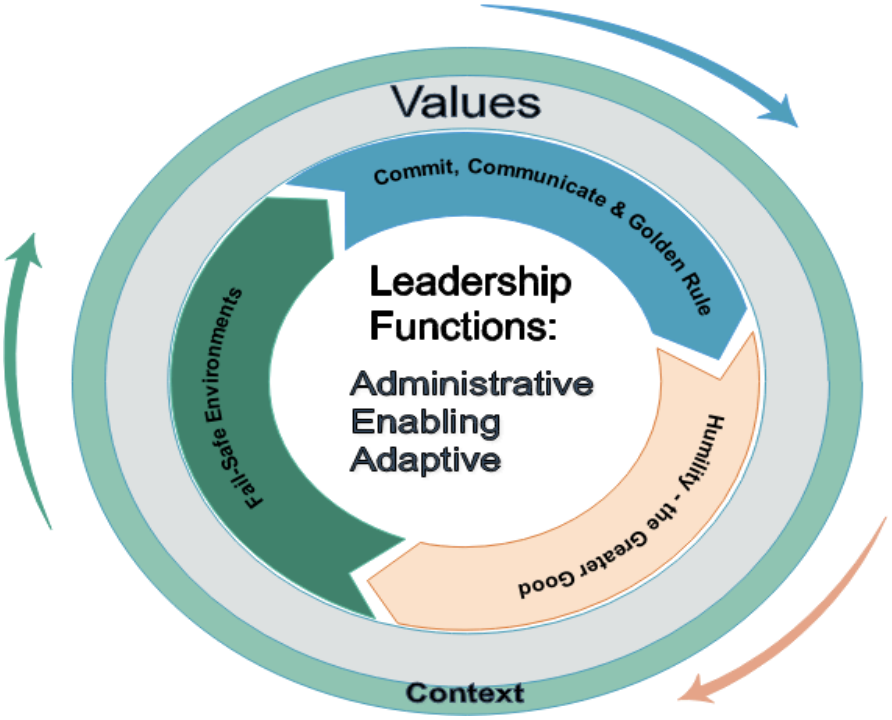

Figure 5.6. Leader values framework: leader roles guided by values and context.

As the complexity of organizations dictate, there are times when a leader must adopt and support different functions to address specific circumstance and context, as was true of the participants in this study. There are situations when collaboration is essential, moments when it is important to let others decide, and circumstances when top-down decisions are necessary. A top-down approach or administrative function may be required when certain individuals need to be terminated, or when people or groups of people must be laid off for the benefit or protection

of the whole organization. Typically, these are not highly collaborative decisions, and, as demonstrated in this study, for thoughtful, caring leaders such decisions are painful to make and challenging to execute. Russ conveys this challenge in the following admission:

> I felt responsibility, you know I felt like a creep for one thing. I knew that the change was right, I knew that we needed to get our financial house in order, you know as a business. My division was impacted less because we were all pretty rigorous, but ya I felt responsible.

In the following excerpt Pat describes a time that leaders in her organization should have ended the consensus process and been decisive, but they could not make the needed decisions because concern for their own positions of power and authority intervened:

> I think that the leadership could have been more decisive. And by leadership I mean the chairman publisher and CEO could have been more decisive and clearer and courageous, because I think that there were decisions that should have been made earlier and put the organization out of pain. Because, while it was a lot of consensus and bringing people together, uhm the consensus, those decisions just tore the organization apart all the more. And I believe in a lot of consensus, but you know they were firmly in their silos and the silo dictates that there is only one good decision for me, because I am protecting my turf and you are not going to get realistic decisions from a group of people that are only gonna make decisions that are in their best interest, and not in the interest of the future of the organization. Knowing that, I really believed and believe now that our structure of consensus decision-making divided the organization and cost a lot of heartache. We pretty much knew that in order to take the organization forward we needed to make tough calls and we shouldn't have left it to the people to ask us not to make them.

Pat's decision-making scenario is a good example of an instance where—as she describes it—the leader(s) should have (within the mantle of the organization's core values) engaged the administrative leadership function and made difficult decisions for the greater good of the organization.

Charisma: A Leadership Personality Trait?

An interesting finding in this research that stood out in relation to other leader characteristics or personality traits involved the attribute of charisma. It merits noting that none of the 17 leaders that comprised the complexity and complexity-plus categories mentioned the

term charisma in reference to themselves. In contrast, two of the three traditional style leaders in this study made a direct reference to themselves as charismatic, noted in the following excerpts:

> Some people have this charisma that is overwhelming. . . . I've had the luxury of meeting people with charisma and with the substance behind it. . . . So with this job, this job has taught me to pull out the charisma, the people at my old job would not recognize the guy I am here. And these people here might be a little scared of that guy.

> I think tags that have been applied to me, uhm charismatic, visionary and transformative. And well flattering, and on the excessive side I suppose there are elements of those that I very much identify with.

Of course, the complexity and complexity-plus leaders in this study are not without charisma. However, it may be the way these leaders conceive of and act on this attribute that makes the distinction. Perhaps the humility of the complexity and complexity-plus leaders suggests that they do not discuss charisma as a personal attribute?

Charismatic leadership is based on one's ability to persuade and inspire and, as suggested below, has been reflected in powerful leaders throughout history:

> Charisma is a tricky thing. Jack Kennedy oozed it—but so did Hitler and Charles Manson. Con artists, charlatans, and megalomaniacs can make it their instrument as effectively as the best CEOs, entertainers, and Presidents. Used wisely, it's a blessing; indulged, it can be a curse. Charismatic visionaries lead people ahead—and sometimes astray. (Sellers, Puri, & Kaufman, 1996, p. 69)

Charisma can play an important role in leadership; however, charismatic leaders do not always demonstrate human-based morality in their behavior. A complexity-style leader, the president of a university in California, shares her opinion of the charismatic leader compared to an individual with a true temperament for leadership:

> I still think that we identify leaders too much through bravado. I think the model I prefer actually is more based on temperament. There was a great book written about the American presidency, written by a guy named Richard Neustad [*Presidential Power and the Modern Presidents: The Politics of Leadership from Roosevelt to Reagan*], and he studied a number of different presidents and his measure of success was their ability to get a number of issues on their agenda enacted and he found that they, their backgrounds didn't matter and their political affiliations didn't matter. What mattered was

> temperament and I think that is really true. Some of that is why people aspire to leadership, you know if they aspire to leadership because of the perceived trappings of power and money, . . . but if they aspire to leadership because they think they can contribute it's a much different space and it makes you focus on getting things done as opposed to acquiring more for yourself. The problem with the charismatic as the primary measure is that you get people who constantly need adulation and attention and more for themselves and it's the opposite of someone who has the temperament to be the true leader.

The term charisma, used in reference to oneself in a leadership position, is associated with the "Heroic" theories of leadership that have led to an examination of the characteristics of senior leaders and the construct of narcissism. In a study based on interviews with leaders from 33 organizations, Higgs and Rowland (2010) found that leaders' focus on "their own ego needs led them into a range of 'traps' that seriously damaged the success of change interventions" (p. 369). In an attempt to understand the antecedents of poor leadership behavior, Hogan, Curphy, & Hogan (1994) concluded from their research that personality traits that are present at extreme levels can lead to negative behaviors or personal shortcomings. Charisma, for example is a personality trait that can have positive attributes such as inspiring and motivating followers, whereas in the extreme it can lead to an overemphasis on ego needs and an alienation of followers.

Contemplating a New Age Paradigm

In the following segment I contemplate the important questions generated by this study's findings, initially posed at the close of section four and relevant to the transition of leadership from the mechanics of the industrial era to the living systems model of a global, information age.

Question one addresses a shift in social values:

1. In the 21st century how are our core values different from those of the 19th and 20th centuries, and how have these changed the way we think about and approach leadership in complex organizations?

Today's America has risen from a radical shift in the norms and values of the 19th and 20th centuries. A predominant value of the former age was *The Great Man Theory* extolling leadership as an inherent characteristic that some people (men) were born with. Though many still believe in the hero leader, values have changed with the times. From our perch in the 21st century, consider the place of women in the workplace in the 1920s or the transformation of our cultural perspective on race and the LGBT community since the Civil Rights era of the 1960s.

The manner in which leaders view and approach leading change in today's richly interconnected and rapid-paced organizations is transforming in accordance with technological and environmental demands. The hero model of leadership, the single person able to assume command, take responsibility for events, and determine outcomes is beginning to lose its luster. Without question, command-and-control leadership is still common and linear and hierarchical approaches to leadership are still prevalent. Currently, one does not need to look far to find prominent and extreme examples in the United States. Yet, we are at the beginning of a new era, a paradigm shift in the way we think and act in organizations. In the following passage Russ describes his experience with this transformation and the values that prepared him for leadership in the 21st century:

> This is something that has come to me recently and I think it's my greatest learning as a leader. So when I grew up I went to13 years of catholic school and I learned that leadership was about humility, it was about selflessness and service. So I learned all that and then I got into the job world and, I was the captain of my high school football team, I was the president of my class and I've always been in leadership roles. Even when I was a kid, . . . my father would say "you're the leader" and my brother will still say to me "you're the leader" so I had a leadership style from those 13 years of upbringing that I thought was the right way to lead. I got into the business world and I was always criticized for that style, that I wasn't command and control, that I didn't direct enough, that sometimes I delegated too much, and the thing was, I went through most of my career thinking I was doing it all wrong, and I didn't know that I was right.

In this reflection, Russ conveys an important issue at the heart of our current dilemma in leadership; that is, the transition of traditional-style leaders based on the mechanistic model of the industrial era, to those at the complexity-style end of the continuum, based on the living systems model of the knowledge era. In support of the values of humility, identified as an important theme in this study, Rowland and Higgs (2008) found evidence showing that leaders behaving in a way that focused on meeting their own goals and needs rather than serving the purpose of the change led to change failure. I posit that this humility value represents a strong behavioral force and a critical difference in the more self-serving beliefs and values of a traditional style change approach.

Question two addresses the viability of a traditional leadership approach:

2. Can leaders whose behavior reflects a traditional approach survive in the 21st century?

This is a critical question for the study and practice of leadership in the 21st century. Can leaders get beyond their own experiences and their values to suspend disbelief, listen and learn from others, and find a better way? According to A. Guskin, "getting beyond" requires specific qualities and skills:

> Getting beyond one's own experience requires humility and deep reflection; it requires a willingness to listen deeply to others, a willingness to be challenged and working with others in a collaborative way. It also requires a willingness to take risks and having a deep sense of confidence in one's ability to be successful, more often than not, when one takes significant risks, and when not successful to admit mistakes and move on. (personal communication, March 9, 2017)

Similarly, I would add the construct of authority to Guskin's description: Getting beyond also requires a willingness to let go of sole control and, as expressed by several of the leaders in this study, divesting oneself of positional authority requires a strong sense of humility. It means the leader understands that while you may have the formal authority, others are also smart, they understand the reality being faced, and share in the organization's core values. For the leader,

getting beyond means you are not better or worse (smarter or dumber) than others. In this humility it means a willingness to forgo more than organizational and political expediency, it means to share individual authority inherent in the leader's role for decision-making and influence of others, thereby enhancing the potential for organizational success.

In 1970 Robert K. Greenleaf published an essay, *The Servant as Leader*. It was an introduction to the concept of humble leadership in which Greenleaf coined the term *The Servant Leader*. Peter Block (1993) continued the theme of the humble leader with his publication *Stewardship: Choosing Service Over Self-Interest*. In this work Block defined stewardship as "a way to use power to serve through the practice of partnership and empowerment" (p. 63). In a five-year study Jim Collins (2001) concluded that the most transformative leaders possess a paradoxical mix of personal humility and professional will. He referred to this type of leadership as "rare and unstoppable" (p. 67).

In the following excerpt Tim conveys his humility when he shares the degree to which he depends on and values the team. He also expresses that he understands his role in creating a positive and supportive culture that will attract and retain quality people:

> So I tell you, you have to have good people around you and you have to retain them to take care of them. I think you're a little short sighted and arrogant if you think you're the one who is going to do it all. I'm not in the operating room right now and they are doing some critical procedure, and I'm depending on the staff to make sure the cleaning was done right. I am depending on the surgeon to make good judgment. . . . I can't be there nor do I have the training, I can't do heart surgery [laughing] so I'm kind of beating a dead horse but you have to hire good people and you have to have a good reason for them to stay. As a leader you have to have a culture that attracts them so you can bring good people in but without a good culture they won't stay.

Tim is an example of the type of humble leader with the values needed to leverage the organization's resources in order to survive and thrive in the 21st century.

I posit that a leader who is focused on personal success and indulges their own ego with a leader-centric approach is likely unable to adopt a more egalitarian position. I contend their values are at odds with those of a complexity-style leader and would require a significant and sustained experience to alter this perspective. Consider the leader-centric focus in the following response about leading change:

> I go back to keeping your eyes always open for the next opportunity. Making sure that, sometimes you have to pass up opportunities and that's an opportunity in and of itself to say no. It would be false of me to say, oh just trust that you are going to get there, because I didn't trust I was going to get here, maybe that fear helped. Part of leading change I think is the fear of not being successful at it. You've got to change that resistance to being a driver and, I box competitively, and I'm so afraid every time I get in the ring. I have a winning record of four to one and I know I'm really good, but I'm sort of gulping for air every time I go into the ring. But it's that driver and turning it into a driver, and turning it into a driver is part of enacting large-scale change.

When posed with the question, "what do you think it takes to lead change effectively?" the leader's response in the passage above is focused solely on himself, referencing his fear as a driver of his own success. This reply appears devoid of any consideration for a team-based endeavor or team accomplishments. As posed earlier in this section, can a leader who is focused primarily inward, on his or her own accomplishments and success, create emotionally supportive work environments? From an egocentric mental schema can a leader develop the values needed to inspire a team-based approach? Can the leader create and sustain environments where people feel safe, valued, respected, and therefor poised to make significant contributions to the organization? From this position can a leader truly focus on the greater good?

Question three considers the role of a fail-safe environment in today's organizations:

3. What is the role of the fail-safe environments in complexity-based organizations of the knowledge era?

Throughout this research, and based on my own experiences as a manager and consultant, a fail-safe work environment is critical to the kind of interaction typical of a healthy and high-performance workplace. Therefore, an essential leadership skill is the ability to create and sustain emotionally safe work environments. With regard to the critical importance of fail-safe environments, consider Project Aristotle, the Google study of hundreds of teams referenced in section one. Google found in this research that high-performing teams were not based, as they had anticipated, on the optimum mix of team member skills, but rather they were characterized by high interpersonal trust and mutual respect among team members. Google found that the influence of group norms (the traditions, behavioral standards, and unwritten rules that govern how we function when we gather) on team performance was profound. This topic was addressed by a majority of the complexity leaders in this study, as described by Jason in the following passage:

> We want to be a place that accepts failure, that doesn't have some kind of passive aggressive or subtle, or not so subtle penalties for failing, cause then it's not embracing failure. So accepting failure means that you actually want people to talk about how they failed and what they learned from that failure, we want people to be vocally self-critical. . . . Ya, we say, don't assume their body odor smells like perfume. We want leaders to reveal their mistakes so we can learn, and then we have to build a culture that doesn't penalize for making mistakes and for revealing their flaws, because nobody is perfect, that's the body odor thing.

In organizations where fear is an accepted part of the culture, the leaders may be unaware or unconcerned that these conditions exist, and/or consider fear to be a healthy platform for debate. Yet, the importance of a fail-safe environment to a productive and healthy workplace cannot be overstated. The notion of a fail-safe work environment was closely aligned with another popular theme, the Golden Rule, the idea that one must treat people correctly.

Question four considers the connection between core values and how organizational members are treated:

4. What is the role of the Golden Rule in complexity based organizations of the knowledge era?

Practicing the Golden Rule or treating people correctly emerged as a critical value espoused by many leaders in this study. It is a noteworthy result indicating a need for deeper reflection on an important core value and its role in organizational culture. The following are reflections of this primary theme and critical value from Jerry and Russ. Note that in the first excerpt Jerry invokes the notion of Complexity Leadership Theory's (CLT) three-function model discussed previously:

> So I think we have had some influence in that regard, modeling behavior that says you can do very good work, and be very tight in a business sense and still treat people correctly. And that's you know an essential value. . . . Now it's mostly reputation, the organization stands for working hard, integrity, honesty, you know we work in very difficult places and sometimes it doesn't work and we say we tried and it didn't work and here are the reasons. I think we treat people very well and we are very clear about what we can do and can't do.

In this next passage Russ describes his decision to retain employees he was encouraged to terminate for fear they would be disgruntled:

> Our HR department was discouraging me from downsizing them. They said you should just fire them, just let them go because they will never be happy [Russ refused to terminate staff]. And I had the highest engagement scores when we did a gallop survey. My R&D function had the highest gallop scores of any function in the business.

The Golden Rule represents a value supported in the leadership literature. In a study of leaders from 33 organizations, Higgs and Rowland (2005) concluded that change approaches based on assumptions of linearity were unsuccessful, whereas those built on assumptions of complexity were more successful. In a 2011 study the authors found that behaviors described as being more facilitating and engaging were positively related to change success. As described in section two, review of the literature, Regine and Lewin (2000) support these claims, arguing that most leaders adopting a complexity-based approach have discovered that "letting go of absolute

control and nurturing the conditions for constructive self-organization can lead to astonishing creativity and adaptability, a robust financial bottom line, and a caring organizational culture" (p. 53). These findings provide support for the view that effective change leaders need to be willing to engage and facilitate as opposed to restrict and direct, and to value the Golden Rule—in safe and supportive work environments—for themselves and their respective organizations.

Question five ponders team engagement:

5. What is the best formula for engaging teams and generating conditions for creativity and innovation? What role should the leader play?

The need for diversity and the creation of psychological safety ensuring people can interact without fear of rebuke or reprisal are important complexity constructs. Critical is the concept of "bounded instability," in which a measure of controlled chaos and tension is a stimulant for team creativity and innovation. Consider how Jerry, the leader of a global organization, describes it:

> It's a pretty noisy environment so people will disagree. I think there are certain things you can't shake, I'm going to just, I don't care what you say I'm going to do it, but that's probably 10 percent of the cases. In 90 percent of the cases, you know people argue and I win some and I lose some, and I say to them look if you win all the time probably you shouldn't be here, and if you lose all the time probably you shouldn't be here. Many of us have worked a long time together and there's a huge degree of trust.

Recalling Christine, the federal agency director, and the value she placed on a "team of rivals approach," or the importance of diversity in decision-making. She claimed that, "if they embrace the values and the broad strategic framework then having difference is really good, but it is managing polarities." Christine's notion of "managing polarities" is a complexity theory example of the tension and difference rooted in the nonlinear dynamics of "instability" located at the "Edge of Chaos." As referenced in the review of the literature, it is one of three forms of disorder found in complex systems: stable equilibrium, explosive instability, and bounded

instability (Stacey, 1995). According to Burnes (2005), due to the risks inherent in stable equilibrium (atrophy) and explosive instability (destruction), it is only within bounded instability (innovation) that complex systems, including organizations, are seen as having the capacity to transform themselves. Therefore, bounded instability—a state not found in a linear approach—is considered to be a profound insight coming from complexity science. It is as a state of behavior, capable of amplified creativity and innovation, that is neither stable nor unstable, but both at the same time (Stacey, 1995). Christine may not be aware of the connection between her "team of rivals approach" and complexity science, but, as demonstrated in the passage below, she fully understands its value:

> I really think it's important to surround yourself with people who bring different perspectives and who are culturally, ethnically, experientially different from you. They can't be so far flung that you can't find a point of commonality, but different perspectives are critical to good leadership.

Question six reflects on developing leaders:

6. How can we support and optimize leaders for the greater good of their organizations and communities, and for society? How do we help leaders lead change?

Our own cultural values and beliefs are critical to answering this question. If power, control, elitism, and traditional hierarchies are what we value and consider essential in running organizations effectively, I believe we will increasingly fall short in a rapidly changing and unrelenting new age. The question instead becomes, "how can we transform our traditional mental models, or our mental schemata, that value the hero leader, that aspire to power and control?" "How can we learn to appreciate and value a shared leadership model that demonstrates respect and trust in organizational members?" The concept of a shared or distributed leadership model is by no means new; the model was first introduced in the early 1920's by a woman. Mary Parker Follett (1924) was the first to pioneer the idea of shared

leadership with her "law of the situation." Follett noted that sometimes it made sense to follow the person in the group who had the most knowledge. In 1933, decades before her concept of shared leadership was recognized and fully appreciated, Follett seized upon the idea of "group power" over "personal power" by describing the pre-eminent leadership quality as:

> The ability to organize all the forces there are in an enterprise and make them serve a common purpose. Men with this ability create a group power rather than express a personal power. They penetrate to the subtlest forces at their command, and make all these forces available and most effectively available for the accomplishment of their purpose. I have said that the leader must understand the situation, must see it as a whole, must see the inter-relation of all the parts. He must do more than this. He must see the evolving situation, the developing situation. His wisdom, his judgment, is used, not on a situation that is stationary, but on one that is changing all the time. (as cited in Kellerman, 2010, p. 92)

Though her groundbreaking writings remained buried for decades, today Follett's ideas—still considered innovative—have become part of the mainstream leadership debate.

In the following excerpt Matt, a university president, alludes to the challenges inherent in the breadth and depth of the societal need for a new approach when he ponders what he calls a "sea change" for higher education and the challenges ahead:

> Higher education has the influx of pedigree and it has a built in elitism to it, it's about rank, full professor, associate professor, tenured track, adjuncts, every mentor knows how many kids we didn't take, what's your selectivity. It's all gate-keeping, right? At its core we don't like to admit it, or say it, it's pretty elitist. We all get puffed up based on ranking. People obsess about it to the extent that it's a strive for excellence. That's great but it is sort of, what will be interesting is you have the sense we're in the middle of a sea change in higher education, because all of that language of exclusivity and elitism and gate-keeping is massively out of sync with access and opportunity and the evaluative nature of what we are doing in our mission and in the orthodoxies we see on the front side with student missions, to evaluations for tenured track, and what merits consideration. So it's, I don't know where we want to end up necessarily but some of those structures and orthodoxies seem increasingly antithetical to the discourse, and to so many other issues.

To address the president's dilemma, one shared by many of America's elite institutions, Zimmerman, et al., 2008, describe complexity science as a broad and unifying framework, one

that rejects linear, hierarchical systems and looks to the whole system and its leadership to enable collective intelligence and informal dynamics in human organizations. They contend that this new scientific management will revolutionize organizations in the coming decades. Yet, the promise of a new scientific management that will usher in a paradigm shift does not address the leadership challenges or the pressing social ills that we face today. Undoubtedly, this will take attention, time, and continuous learning. It will take the knowledge that large-scale change can be a slow process and individual contributions make a difference. As Leana described leading change in the context of heavy bureaucracy, "You plant seeds, and you take it one little step at a time." Or, to borrow one of Christine's favorite quotes:

> Sometimes it may feel that despite our very best efforts, for example speaking up against ignorance or bigotry, when we lead a campaign for a good cause or raise awareness on a global issue it is just a drop in the bucket, no bigger than a single raindrop. …but raindrops become rivers, rivers swell into the seas and the rise and tides literally transform the landscape.

Question seven ponders the role of the complexity-plus leader:

7. What is the role of the "Complexity-Plus" leader and how can we best understand, harness, and learn from these values and this leadership approach?

The Complexity-Plus approach to leadership that emerged in this study is as intriguing as it was unanticipated. It signals a style of leadership not clearly defined in the literature. We begin by posing the questions for what it means to step outside the bounds of traditional norms and seek a broader effect. How can we develop the respect and motivation for change that has the potential to impact society and the world? How can we develop and train leaders to aspire to create change with the potential for this kind of breadth and capacity? What are the risks involved? Responding to this question and the queries it generates is a challenging task that might require an understanding of the myriad challenges and potential solutions that reside

beyond our organizational and social norms. Perhaps the complexity-plus leaders in this study have provided a clue by revealing the intense experiences of their youth and young adulthood that lead to the development of their complexity-plus style values. Though I understand the importance of developing complexity-plus style leaders, I do not yet have a clear vision as to the integration and specific role of the complexity-plus leader within the boundaries of the organization, or how we might learn to quickly identify and effectively develop this style of leadership. However, I suspect that Allen poses a critical question at the heart of this change approach with his comment: "You know that was a great leap forward, fifty thousand years ago in human intelligence, art, music. And why did it happen? We don't know why it happened, but my feeling is if we don't have another one then we're going to lose everything."

Question eight contemplates how to prepare leaders for the 21st century:

8. How can we best prepare today's leaders, regardless of demographic or style, for leadership in the 21st century?

I began this study by questioning the extent to which leaders overestimate their ability to effectively understand and manage change. The results suggest that there exists a new breed of leadership that intuitively understands complexity principles and what it takes to lead in the modern era. I am also reminded that the work is challenging and that many leaders we encounter and know still retain their values of "superiority, responsibility, and authority," and that they perpetuate the belief that they, and only they, have the expertise and intellectual capacity to effectively lead their respective organizations. In order to prepare leaders perhaps we must reconsider today's leadership development practices along with the values we espouse. In 2005, Burnes warned that the implications of 21st century realities for real-world organizational leadership were momentous. He understood the challenge faced for leaders of the modern era:

their need to rethink hierarchy and control, manage in changing contexts and promote self-organization. Complexity theory is poised to help current and future leaders make sense of advanced technology, globalization, intricate markets, cultural change, and more (Snowden & Boone, 2007). As outlined in in the introduction, academics and practitioners increasingly see complexity science as a way of thinking about organizations and promoting organizational change (Burnes, 2005; Chiva et al., 2010; Stacy, Griffin, & Shaw, 2002), but what does this mean? What does it look like in real-world leadership? What must we understand to prepare leaders of the future?

Vital to this 21st century, complexity-based vision of change leadership, as demonstrated and reinforced by this study, is an understanding that the act of leading change is deeply intertwined with a leader's personal values. From a scientific perspective, we tend to think of leadership as value-free, yet leadership engages our values at every level. Heifetz (1994) argues that the mere term is laden with emotional content that carries with it implicit norms and values. Yet, as Heifetz (1994) reminds us, we have a tendency to think that the term leadership is void of values; we like to consider it a term we can easily generalize amongst people we consider leaders, no matter their values:

> We say that Pablo Escobar head of the Medellin drug cartel, was a "leader" even if we detested his values, because he motivated followers to realize his authority or people who have a following. We talk about the leadership of the gang, the mob, the organization—the person who is given informal or formal authority by others—regardless of the values they represent or the product they play a key part in producing. (p. 13)

Heifetz is poignantly reminding us of our own leadership values. In the American culture we have a tendency to think of anyone who holds an important position of power as a leader, no matter the offensive values they reveal or the objectionable behavior they display. Heifetz (1994) outlines the risk inherent in this thinking:

> The contradiction in our common understanding clouds not only the clarity of our thinking and scholarship; it shapes the quality of leaders we praise, teach, and get. … For example, when we equate leadership with holding high office or exerting great influence, we reinforce a tendency to value station and power. We are not simply studying or using power; we unwittingly communicate that power has intrinsic worth. (p. 18)

To explore the question of 21st century change leadership, I turn back to the complexity definition of leadership as an activity, as opposed to a position of authority or set of personal characteristics. Leadership as an activity can be accessed from multiple positions in the organization; it also allows for the use of organizational resources (people) depending on the demands of the culture or situation (Heifetz, 1994). Burns (2003) describes the ideal leadership of the knowledge era as one that is understood as a whole-process system in which the function of leadership is central; in it we no longer see individual leaders, rather we see leadership as a basic process. From the author's perspective "Leadership electrifies the system as followers become leaders and vice versa" (p. 185).

According to Heifetz, to address leadership challenges of the 21st century we need a different idea of leadership and a new social contract that promotes our adaptive capacities, rather than inappropriate expectations of authority. Therefore, the task of transforming our thinking about what it is to be a good leader in the 21st century is an adaptive challenge. In it we move leadership from a position of authority to an organizational activity, and we consider that all have the potential to assume a leadership role. It is a challenge that necessitates changing our values, beliefs, and behaviors.

The final section that follows discusses implications of the research, final conclusions, and closing reflections that consider leadership and change during a politically tumultuous and historical period in our nation's history.

Implications, Conclusions, Closing Reflections

Implications for Leadership and Change

Many elements of complexity and emerging change theory were reflected in the stories recounted by leaders about their personal experiences. The results of this research suggest myriad implications significant to the scholarship and practice of leading change in complex adaptive systems. This section highlights the most important of these findings. First, is the choice of research methodology and its relevance to the study of leadership and change. The dominant approach to leadership studies over the past two decades has been quantitative (Avolio, et al. 2009; Higgs & Rowland, 2011). Narrative inquiry was selected as the qualitative methodology for this study given the enhanced potential to capture the nuance and rich nature of leader experience. This goal, essential to the effective study of leadership and change, is largely missed in the literature by quantitative research or by more formalistic qualitative styles. Narrative inquiry is ideally suited to the goal of exposing and revealing the rich experiences embedded within leaders' stories. Its rejection of prediction and control and focus on lived experience in all of its ambiguity make it an ideal companion to qualitative studies.

Secondly, this research indicates the presence of three general and conceptual categories of leader approaches to change, with the common thread being that each model emerged from the individual's life experiences and values, and was influenced by culture and context. These results suggest the importance of values and context in successful change implementation and the need for scholars, trainers, and practitioners to be aware of the significant role of these constructs in leader development and change implementation. In relation to culture and context, the findings suggest that leaders need to frame changes and to articulate clearly the core principles and values underpinning the changes, as well as to distinguish these "hard rules" from

areas in which local input and differentiation is feasible in the process of implementing a strategy.

What was most elucidating about this study was that 21 senior leaders were interviewed from 20 different organizations, and yet there was consistency in the data pointing toward values and experience as a driver of leader behavior, in addition to common themes among the individual categories. With an acknowledgement of the leader approach continuum the results of this study indicate that traditional-style leaders shared an inward focus on their own capabilities, authority, and success; complexity-style leaders focused on "the greater good" for the organization and its members; and the complexity-plus style leaders expanded their ambition through an external perspective, seeking to achieve widespread social good.

The study suggests attention ought to be paid to the values held by leaders and that, for the benefit of future leadership development, we consider carefully the type of values held by complexity and complexity-plus leaders in contrast to those of traditional-style leaders. For example, the role of humility or willingness to make professional "sacrifices" or individual allowances for the good of the organization and its members appears to be an important construct that deserves closer examination. It is noteworthy that this is a specific principle held by complexity and complexity-plus leaders in this research that did not emerge among the traditional-style leaders. The values of traditional leaders led to a focus primarily on exercising their responsibility and authority, and on their own advancement.

In a qualitative study of change-leader behaviors based on interviews from 33 organizations, Higgs and Rowland (2011) found that leader-centric behaviors have an adverse impact on change implementation. In contrast, behaviors that the authors described as being more facilitating and engaged were found to be positively related to successful change

implementation. In practice, these findings could have implications for organizations in terms of criteria and practices involved in the selection and development of leaders who are needed to implement change successfully.

To the question of complexity-style leader development, Guskin (A. Guskin, personal communication, March 9, 2017) reasons that development may be contingent upon the leader's values and personal attributes that point to the potential for complexity leadership. According to Guskin, a combination of complexity style values (participatory approach, empathy, humility, good listening skills, etc.) alongside a shared sense of commitment to the greater good might provide a solid foundation for the development of complexity leadership. These specific skills and potential leadership development ideas may include the following:

1. Developing powerful listening skills;
2. Enhancing interpersonal skills;
3. Creating simulations that enable potential leaders to deal with significant levels of uncertainty and ambiguity;
4. Creating the conceptual tools to understand how effective organizations function in 21st century realities; and
5. Enabling potential leaders to understand such issues as focusing on the greater good and strategic thinking, rather than focusing on tactical interactions.

An intriguing implication of this study is the recognition of the complexity extension category of change approach in the complexity-plus leader. Though, undoubtedly, there are a number of approaches to change to be found in the literature, this research points to the recognition of a new style of change approach that purposively steps beyond a focus on the immediate organization in order to achieve broader, more expansive, change goals. To my

knowledge, the complexity-plus leader is a construct or leadership approach to change not previously identified in the literature. However, as noted previously, it is an approach that may be better understood through the lens of leadership developmental theories. The background of the three leaders in this category all point to extreme experiences in the their youth or early adulthood. The first watched his father "drop dead" at the age of eight, and a friend who drowned had died in his arms as a schoolboy; the second was involved in antiwar activism as a youth, and the third had been in Peace Corps and spent much of his career in global, social activism. All three of these leaders embraced complexity style values, ran successful organizations or programs, and had ambitious change goals that took them outside the bounds of the organization and beyond traditional social norms.

Awareness in the case of the complexity-plus leader might include increased knowledge of the leadership approach, where and how these mental schemata originated, and an understanding of the value of this type of approach to change and how it might be developed in potential leaders. The concept of the complexity-plus leader has significant potential; it is a finding in the study of leadership and change worthy of further investigation.

Conclusions

In the knowledge era new vistas are opening toward our perspectives on leadership and change, largely thanks to the melding of complexity science, organizational theory, and the increasing availability of innovative models and techniques for adapting to a new world order. This study of change leaders and their stories was a foray into that realm. It is the product of an in-depth exploration of the experiences of 20 executive or CEO-level change leaders from American corporations, government agencies, hospitals, and universities. The results contribute to our understanding of leader sensemaking of change implementation and their approaches to

the meaning-making process in Complex Adaptive Systems (CAS).

The role of core values. The intriguing results of this study point to the critical role of values of the individual leader and of the organization. In the leadership literature we find a correlation between leader approach and personality. Hogan and Hogan (2001) argue that "to understand leadership requires taking the concept of personality seriously" (p. 40). In this research we grasp and appreciate the association between leader values, personality, and approach to leading change. Similarly, the majority of these leaders expect their personal values to match those of their respective organizations. It was believed that in this scenario the leaders could be their most authentic, and therefore fully focused on the task of leadership. The importance between alignment of personal and organizational values was considered so essential that without such a match the individual was inclined to leave the organization. (I should note that a specific values alignment question was not asked of the participants, and though values was a research interest, the topic of alignment came up only if the participants offered it.) As indicated in the change leadership framework model, vital to good leadership and effective change implementation is a leader's core values, which, in this study, included: the Golden Rule or treating people correctly, leader humility and the willingness to make professional sacrifices for the greater good, and the creation of psychologically safe or "fail-safe" work environments.

Core organizational values also played an essential diversity facilitation role. Based on this research, difference matters. The significance of having people who could bring diverse perspectives, experiences, cultures, and backgrounds to the table was recognized as critical to the quality of organizational decision-making. In addition to shared core values, it was also evident that these diverse organizational members needed to generally support the institutions' strategic framework (mission, vision, strategy). Only then could a productive strategizing and

decision-making process be established—one that incorporates and benefits from different perspectives. The results of this study suggest that an organization's core values and strategic framework serve as a container, or the "bounded instability" that facilitates a robust strategizing and decision-making process, what in complexity theory might be described as *the edge of chaos*. I posit that without these shared core values, and a framework to support and contain diversity and tension, the change process breaks down or becomes dependent upon a traditional homogenous, or top-down, approach, thereby significantly limiting its efficacy.

An important finding of this study is the notion of the critical role that shared core values and general support of the strategic framework plays in the ability of the organization to achieve cultural alignment and therefore, be poised to learn, to produce, and to prosper in the diverse, richly interconnected, and rapid-paced environments inherent to the knowledge era. Cultural alignment here refers specifically to the orientation of all members with the institution's values, broad agreement with the strategic framework, and commitment to the organization's purpose or causes. Jerry, who espouses the principles reflected in this study, speaks to the importance of values and cultural alignment in the following passage:

> I've been interviewed by a lot of people who ask me why it works. And basically I've said to them we're very clear about what this culture is, this culture is not hierarchical the financial side is very tight, the program side is very entrepreneurial. It's very flat and very collegial as opposed to hierarchical. It's very focused on productivity. So we're a profit and non-profit. . . . We are well managed, people understand it's well managed, here people have to work hard at it. We say to them, if you have a big ego don't come, if you can't work in teams, don't come if you can't mentor and be mentored don't come. If you don't have a sense of humor don't come. This is very hard work.

Within the complexity science constructs of bounded instability and edge of chaos, and the concept of fail-safe work environments, there is fertile ground for risk-taking, experimentation, creativity, and adaptation. The critical point is that complexity-based core

values, like those identified in this study, constitute the foundation for strong, productive knowledge era organizations.

Culture, context, and change approach. The findings here support the assertion of a relationship between context and leader behavior or leader approach. The literature strongly suggests that the situation or context is highly relevant to leadership style (Dulewicz & Higgs, 2005). These results reinforce the contention that the relationship between leader approach (leadership styles) and the context in which they operate is important (Dulewicz & Higgs, 2003; Fiedler, 1964; Hersey & Blanchard, 1969). The 20 leaders in this study recognize and respond to the need to approach change in accordance with the organizational cultures and contexts within an office division, around the country, or the world. Though not apparent for traditional-style leaders in this study, the strategy for effective operation—independent of the cultural or contextual differences—appeared to be the development of organizational cultures through strong values and organizational frameworks that support the mission of the organization. It is noteworthy that this conclusion reflects the organizational "container" concept or to the need for bounded instability in strategizing and decision-making among diverse organizational members to promote creativity, innovation and good decision making.

The role of context also clarifies the application of the Complexity Leadership Theory (CLT) model in Complex Adaptive Systems (CAS). The efficacy and application of CLT to leadership in this study was evident. As a contextual, change model, CLT is an important tool, as well as a beneficial perspective for complexity leaders. Within the canopy of values and contingent upon context, leadership moves between three functions: administrative, enabling, and adaptive. The crucial point being that it takes adherence to core complexity-style values, and movement between all three functions according to context, for effective leadership in CAS.

The value of an open mind. Another factor critical to complexity leadership, and an important theme that was absent amongst the traditional-style leaders, was the capacity to genuinely (and with respect) listen, learn, and adapt behaviors in response to the changing environments. The emphasis here is on the ability to adapt behavior, not simply to facilitate an information sharing or strategy development session. It is essential to establish a process whereby leaders and organizational members can genuinely listen to and learn from each other, from all levels within the organization (as well as externally), in order to seek valuable insights, ideas, and methodologies. It was evident from the narratives that the ability of the leader to authentically engage with an open mind, and then change mental models and modify behaviors appropriately, was both challenging and crucial to the success of a complex, knowledge-era organization. A common refrain among the study's participants was "you can't take criticism personally." It may be that within this construct lies the foundation for the transformation of traditional-style leaders toward an approach more suitable to the richly interconnected, rapid-paced environments of the information age.

Implications for Future Practice and Research

Exploration and understanding of leader sensemaking and sensegiving during change implementation from the leader perspective is an emergent and relatively unchartered domain. Opportunities for further research in this area are plentiful. Based on this study of leaders' experiences with change implementation, a number of important recommendations can be made:

1. The expansion of qualitative research methods in leadership and change could prove important to the field. Especially elucidating in this area is the use of narrative inquiry methodology to provide a more nuanced and in-depth approach to exploring and discovering the important lessons burrowed within our stories.

2. The experience of the global leaders in this study reflects a need to better understand their experiences in leading change across cultures and the modification of change implementation styles and techniques required. Similarly, this research points to the importance of continued and robust examination of 21st century leadership approaches within a specific organizational context, such as the three organizations represented in this study: (a) a stable organization delivering clearly understood results, such as the bureaucratic government organization; (b) a highly transformational context focused on producing radical change, such as that of the national newspaper transforming to a digital medium; or, (c) an organization that faces significant but not radical change, like the international public health consulting firm. In the same vein as the research done by Dulewicz and Higgs (2003), the potential findings of such a study could provide enhanced understanding of the specific influence of culture and context on leader change approach, as well as offering concrete suggestions about how one might need to modify leadership styles and techniques according to contextual change factors.
3. Leadership in regards to interorganizational (richly interconnected) systems is often mentioned but rarely studied. Therefore, the study of leaders who routinely work in interorganizational environments could be an important area for further research.
4. Certainly, an intriguing outcome of this research was the identification of the complexity-plus style leader. This finding warrants further exploration, perhaps a case study methodology investigation of this style of leadership and its organizational and social value.

Overall, the results of this study suggest that further research is needed to explore leader values, as well as their relation to context and change approaches. The elucidation of the role of values in change implementation points us to the leader's psychological orientation and contributes to our understanding of how we might focus on identification, training, and development to better prepare future change leaders.

Limitations

All research has limitations and this study is no exception. This investigation of leaders' experiences in leading change was modest in scale. The primary task in the interpretation of this data was to understand the participants' sensemaking of change and the actions or behaviors that were the result of this process. As noted by Chell (2004), there is a challenge in interpreting an individual's report of subjective experiences and this is one of the significant challenges of constructivist research.

Narrative inquiry research is a qualitative approach focused on an in-depth exploration of individual stories that acknowledges the bias of both the investigator and the participants. True to this methodology, researchers and participants come to each study with unique perspectives, and the investigator's biases as well as those of the participants influence the research. From an epistemological perspective, narrative inquiry draws the researcher into a relationship with the participants, and into the place where the stories are being told (Clandinin & Connelly, 2000). For the investigator, perspective and personal biases affect what questions are asked and the point of view used to code the transcripts, interpret the data, and form conclusions. In this study, perspectives were limited to that of the 20 leaders and the investigator. As noted previously, this study included a variety of leaders and leadership styles. Throughout the course of this research

I worked to put aside my personal bias and to observe, document, and analyze the data objectively.

The analysis of stories using narrative inquiry methodology revealed common themes among participants; however, this design choice may have increased the likelihood of diminishing the separate features of each individual account. Furthermore, the individuals in this study were all in leadership roles, their stories reflected their own perceptions and these were not corroborated by others. Therefore, one of the limitations of this study was that it only examined the senior leaders' perspectives and did not offer a balanced view of the change phenomenon being explored.

In narrative inquiry the investigator-participant relationship is considered an important vehicle for a rich exchange and is typically constructed over time and multiple interviews. In this study, time between the researcher and each participant was limited to one interview per participant, lasting approximately one hour in length. Only three of the 20 participants had a prior established relationship with the investigator, and five were casual acquaintances. However, this limitation was somewhat mitigated by a majority of these interviews occurring in person.

A majority of participants in this study (14) were complexity style leaders, one of three leadership approach categories emerging in this research. This result is likely due to the nature of the topic and the investigator's access to a specific pool of leaders. However, this limitation is mitigated by the research methodology's focus on the content of the material as the most significant, as opposed to the quantity of interviews in any one category.

Closing Reflections

"I've learned that people will forget what you said, people will forget what you did, but people will never forget how you made them feel" (Maya Angelou, 2012).

In December 2013, at the time of Nelson Mandela's death, I was reading a book by Donna Hicks that resonated: *Dignity: Its Essential Role in Resolving Conflict.* I recall making the connection between the notion of dignity and Mandela's leadership approach, remembering that Mandela was a leader who understood the power of dignity. He knew that to treat people with respect creates inner stability and a sense of belonging to something bigger, whether it is an organization, an institution, or a nation. In Hick's (2011) poignant work, I was struck by the following passage and its relevance to leadership:

> What seems to be of the utmost importance to humans is how we feel about who we are. We long to look good in the eyes of others, to feel good about ourselves, to be worthy of others' care and attention. We share a longing for dignity—the feeling of inherent value and worth. (p. 6)

In this study, the notion of dignity, of treating people correctly, was essential. It is worth noting again that this basic concept of humanistic interaction was acknowledged and espoused by virtually all of the complexity- and complexity-plus leaders in this research, but barely a whisper came from the traditional-style leaders on the topic. What did emerge from two of the traditional-style leaders was an expressed interest in mentorship, and the pleasure at seeing others succeed, respectively. These are valuable, people-focused constructs, but it is not clear if, in the case of these leaders, their values derive from an egalitarian place of equality, or from paternalistic notions of good leadership. I have a bias in this domain. I believe that to lead correctly one must value people, all people at all levels, and treat them as equals with respect and dignity, always. As one leader said, "You must treat people well, whether you fire them or not."

Without a humanistic culture of dignity and regard, an environment that values the individual, I believe it would be nearly impossible to achieve the psychological safety and the level of trust needed to thrive in an adaptive, change-ready organization. Without a secure and caring culture, much of the organization's best talent will remain hidden, and, most likely, these valuable resources will become disgruntled. It is not only a humanistic need, but, in fact, a bottom-line issue. You must create supportive workplace environments that embody value and respect, as most of the leaders in this study espoused, and as Burns (1978) reminds us, "to release human potentials now locked in ungratified needs and crushed in expectations" (p. 7). At times I am mystified that this fundamental principle continues to be overlooked or ignored, and often needs to be defended and protected. Few of us can say we have not suffered at the hands of a seemingly heartless, command-and-control leader, specifically, the woman or man whose core values come from a place of authority and responsibility, if not superiority.

One pleasant surprise that emerged in the course of this research was to encounter extremely successful leaders who debunked the idea that one should not make emotional connections with those they lead. In fact, from these leaders' perspectives, the opposite is true. Getting to know your colleagues on a personal level was essential. This point was underscored by the CEO of a spectacularly successful electronic commerce firm:

> For instance, with my team and I've always believed that you have to spend at least one night away, where you can't go home you just have to get to know the people that you work with. It's such a simple thing, but it works. You put some pennies in the bank and count, and later when you are fighting you remember something positive about that person and not that you gloss over the bad facts but you are usually more respectful and I think it matters, the accumulation of all of these interactions. If there's too much friction we are wired to shut down, which is not okay. If you are trying to build something this big people have to be willing to take risks and put themselves out there.

Many times, including during this research, leaders have said to me "you can't be friends with subordinate staff." I've always believed there is a critical role for emotional connections

and close relationships in the leadership function. Must a leader be cold and unemotional or, at best aloof and distant in order to make hard decisions? The most powerful influences consist of deeply human relationships, do they not? What is the "fear of friendship" for a leader? One might assume, for example, that if you are in a leadership role and must terminate an individual or a division of employees, this cannot be done after having established emotional bonds. In fact, as several of the leaders in this research demonstrated, it can and should be done from exactly this position. The results of this study emphasize that that the distinction lies with values. If difficult decisions are made in a transparent manner, within the cloak of a leader's and the organization's core values—principles infused with dignity and respect—then difficult decisions can be made justly, at the right time and for the right reasons.

As discussed previously, based on Complexity Leadership Theory (CLT) leadership moves between three different functions (administrative, enabling, and adaptive) depending on context. When difficult decisions are needed—as they are often required of a leader—if done within a culture of dignity and respect, where all are heard and valued, challenging issues can be better managed. Once you have authentically listened to other opinions and genuinely heard your critics, but fail to come to consensus—this may be the moment to make the "Justice Potter Stewart on pornography" call. Building on a foundation of trust and respect, your decisions will likely result in finding the support you need, if not the agreement you want.

Leadership then and now. In 1978, James Macgregor Burns opened his seminal book on leadership with a prologue titled "The Crisis of Leadership." He argued that the fundamental crisis underlying leadership is intellectual, declaring that we know far too much about leaders and far too little about leadership. Burns claimed that we have long lost the practice of rich literature on rulership that flourished in the classical and middle ages. He reasoned that:

> without a powerful modern philosophical tradition, without theoretical and empirical cumulation, without guiding concepts, and without considered practical experiences, we lack the foundation for knowledge of a phenomenon—leadership in the arts, the academy, science, politics, the professions, war—that touches and shapes our lives. Without such standards and knowledge we cannot make vital distinctions between types of leaders; we cannot distinguish leaders from rulers, from power wielders, and from despots. (Burns, 1978, p. 2)

Considering the time, Burns wrote and published his important work on leadership in the 1970s; his book appeared when there was little or no formal leadership study. What prevailed was the notion of the hero leader, or the great man theory of leadership. The idea that a man—at the time leadership was strictly a male domain—was born a leader; in other words, it was not something that could be learned or developed. Burns (1978) referred to the study of leadership as *unconsciously elitist*, projecting heroic figures against the shadowy background of drab, powerless masses. Contemporaneously to this work, the decade of the 1970s was the height of Watergate and the ending of the Vietnam War. It was a moment in history when Americans watched, in daily exposés on their television screens, Nixon's Watergate scandal unfold amidst the recent backdrop of the horrors of American troops in combat. At issue were abuses of power on the heels of a devastating conflict, on a scale that the American people had never before witnessed in their lifetimes. Burns was writing about leadership at a crucial turning point in our American history. He was responding in a scholarly context, to the need to provide standards and knowledge that would help us to make vital distinctions for future generations; that is, distinctions between rulers, power wielders, and despots. Following an earlier sentiment espoused by Burns, leadership is nothing if not linked to worthy values and collective purpose.

At the time John W. Gardner was Secretary of the Department of Health, Education, and Welfare and engineer of Johnson's Great Society. In *No Easy Victories* (1968), Gardner wrote about the role of leadership in society:

> Leaders have a significant role in creating the state of mind that is the society. They can serve as symbols of the moral unity of the society. They can express the values that hold the society together. Most important, they can conceive and articulate goals that lift people out of their petty preoccupations, carry them above the conflicts that tear a society apart, and unite them in pursuit of objectives worthy of their best efforts. (as cited in Bennis, 1989, p. 13)

This country has had great leaders in our history that have served as extraordinary role models capable of uniting torn societies in pursuit of worthy objectives.

Nearly, 154 years ago Lincoln, a president whom we celebrate and admire for his unwavering commitment and honorable values, stood on a windswept, battle-weary field in Gettysburg, Pennsylvania, and delivered the most famous speech of all time. It was a three-minute masterpiece of leadership and change. In his Gettysburg Address, Lincoln's vision for the country was real and noble. In November 1863, he reminded us that the country's principles were far bigger than any one person. Inherent in Lincoln's message, were the values that the humble leader must understand and communicate if the mission is about far more than any individual or bottom line. Change must have a compelling vision. Change necessitates that the mission is worthy, the values clear, and the trust strong. *"*That this nation, under God, shall have a new birth of freedom and that government of the people, by the people, for the people, shall not perish from the earth" (Gettysburg Address, 2017).

Lincoln led during times of change that few of us can imagine, wrought with agonizing life and death decisions, and powered by his shared vision, with an aim toward worthy common values. Lincoln, a man with great passion and purpose, was a highly principled leader who changed the world. Yet, we should not think of President Lincoln as a hero, for that would be to mythologize an individual who was merely a mortal human. Lincoln was simply a humble man capable of greatness. He was a leader with strong values who acted according to his conscience. He was an exceptional role model, for his day, and ours.

At this time in our nation's history, colored with the fierce advent of national populism, alongside a seeming abandonment of trust and decorum, we are inexplicably witnessing what many consider to be the grip of authoritarianism at the highest levels of leadership. Now, like never before in our lives, we must become and stay vigilant toward our environment, our society, and our politics. As we look to our role models, like president Lincoln, and like president Obama, we must learn from the lessons of our past and present, and never forget that "the quality of all of our lives is dependent on the quality of our leadership" (Bennis, 2012, p. 543).

Epilogue

It has been an unforgettable experience and a great honor to have met and discussed important leadership topics with extraordinary leaders across the United States. I am grateful, if not overwhelmed, by their gracious generosity, enthusiasm, and the quality of their leadership. I truly did not anticipate such a warm welcome and genuine interest in my work. It was a group of extraordinary people who gave freely of their precious time and shared their valuable experiences in order to contribute to this study on leading complex change. I have endeavored to represent all of the participants accurately and to draw from their poignant stories in order to make a collective contribution to the study of leadership and change. At such a tumultuous and challenging time in America and across the globe, the participants of this study have restored my faith in leadership and its future.

Appendix

Appendix A: Primary and Subordinate Codes

1. Basic Tenets: Commitment, Communication and the Golden Rule

- Commitment to the purpose or causes
  - Core values and culture
  - Courage through values
  - Cultural alignment
  - Keep the values alive
  - Promote mission, vision, values and purpose
  - Reputation
  - Shared stories to promote culture
  - True weave of vision and values
  - Use of the organization's MVVP to communicate worldwide
- Communication and transparency
  - Clear voice from the top
  - Communication via vision, mission, vales and principles
  - Language matters
  - Opportunities for dialogue
    - Discuss topics openly – create confidence
    - Ensure front-line knowledge sharing
    - Group meetings
- Listen and learn
  - Access information in different ways
  - Criticism – "it's not about me"
  - Embrace adversity
  - Listening process
    - Hear all stakeholders
    - Know pain points
  - Seek understanding
  - Value listening as a learning opportunity
- Treat people correctly
  - Create positive work environments
  - Leaders resist quick assumptions
  - Empathetic termination

2. Conditions for Transformation

- Change alignment – mental model shifts
  - Use the organization's language
- Dream down and work from the bottom up
  - Change takes time

Know and communicate the destination
Org DNA: Meet them where they are
Structure for success

Embrace resistance and suspend disbelief
Appeal to the heart
Dispersing power
Increase exposure to diversity
Listen respectfully and seek solutions
Beware protection of status quo
Question assumptions
Recommit
Reduce uncertainty and provide hope
Resistance is a mindset
Resolution through dialogue and engagement
Take personality out of it
Trust and open communication
Understand structure provides comfort
Use humor and "shock the system"

Emotional safety
Feel affirmed, not judged
Avoid king syndrome
Promote vocal self-criticism
Role of trust in conflict
Trust colleagues and staff
Value, respect and trust one another

Experimentation, tension and creativity
Change outcomes – accept the unknown
Learn from mistakes
Rigor and improvisation
Tolerance for ambiguity
Unlock the creativity – set people free

3. Culture and Context

Change perspectives: opportunity or loss
Change: global differences
Fraught environments
Structure to provide comfort

Diversity, inclusion and equality
Equal and important roles
Leadership at every level

- Productive cultures optimized
  - Demonstrate the desired culture
  - Flat and collegial versus hierarchical
    - Required qualifications: invested in mentorship, work in teams, no big ego, sense of humor
  - Informal networks
  - Recognize and reward
  - Shared integrity
  - Symbolism

4. Leader values

- Assume the responsibility and authority
  - Apply knowledge
  - Artificial harmony
    - Contributes through work not relations
  - Charisma and substance
  - Command and control
    - Battle-like environment
    - Dispassionate
    - Expects loyalty
    - Lack of transparency and trust
    - Rule through intimidation
    - Source for command and control is not bad intention
    - Structural, cultural and process reasoning for CC approach
  - Commitment to the community and arts
  - Community service
  - Father figure
  - Focus on ROI
  - Hero leader model
    - High self regard
    - Leader stoicism is valued
  - Inability to fail, must win
  - Know you have a boss
  - Leader hierarchical values
    - Diagnostic approach
    - Director decides on task
    - Leader takes ownership
    - Leader's teachable moments
  - Management in heavy bureaucracy
    - Accountability and benchmarks
    - Focus on executing the mission
  - Personal and professional success
  - Desire to be seen as a good leader
  - Traditional style strategy planning
    - Causes suspicion among stakeholders

The leader's voice is thought critical
Leader hears goals repeated
Models outcomes through dialogue
Moves forward with shared understanding
Leader aware of peoples' limitations – leader plays catalytic role
Vision is created and owned by leader and exec staff

Motivated by the greater good
Applying oneself fully
Be inspirational
Change as the fabric of life
Collective success
Commitment to the org's mission that includes a social impact
Do important work in the right way
Embrace mistakes boldly
Practice humility
Knowledge and competence matters
Leader development of others
Learning
Liberating people
Lucrative and valuable to society
Make significant contributions
Mentorship
Noble purpose
Organization quality over size
Positive outcomes
Shared leadership approach
Staff members are cared for
Stay true to your personal values
Trust your people
Value diverse perspectives
Strong work ethic

Thinking beyond traditional norms
Avoid "group grope"
Buck the rules
Change must be sustainable
Avoid seeking the "golden calf"
Leadership is a long haul game
Think about quality and practicality
Understand life is finite
Seek to make positive change in the world
Feel some urgency to make a difference

5. Leadership approach

Complexity
- All seek the same things
- Consistent with true self
- Esprit de corps
- All working together
- Exposure to complex change
- "Flip the model" give control back
- Have great people around you
- Leader as team player
- Leverage resources
- Listen and learn
- Listens and collaborates
- Management structure is demonstrated
- People focus
- Positive tone
- Adjust for the greater good of the org
- Shared decision making
- Strong leadership team
- Technical or adaptive change
- Thoughtful decision making

Complexity-Plus
- Goals beyond the organization and its members
- Make positive local and world change

Traditional
- The leader defines parameters
- Only the leader has the responsibility and authority
- Only the leader has the experience and intellectual ability to guide the organization
- Learn to work together or leader must fix
- "Swinging Dick" model of leadership

6. Team engagement

Build relationships that endure
- Develop emotional safety
- Develop trust

Managing polarities
- Value diversity of race, ethnicity, styles, and perspectives
- Embrace the core values the guide you
- Difference enhances decision-making

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