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Development and Validation of the Adaptive Leadership with Authority Scale

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Abstract

A reliable scale to measure adaptive leadership with authority—leadership from a position of power—does not exist. This was an embedded mixed-methods study–QUAN(qual) with data collected through an online survey instrument that included the proposed scale items and an open-ended question. The quantitative part of the study, using data from 436 respondents (92.7% from Mechanical Turk, 7.3% from snowball sampling), involved the development and validation of a unidimensional scale that measures adaptive leadership with authority using exploratory and confirmatory factor analysis. The 11-item scale had a Cronbach's alpha value of .891 and thus displayed high reliability. In the qualitative part of the study, thematic analysis was used to analyze data from 550 respondents to confirm the presence of adaptive leadership with authority sub-constructs and identify possible adaptive leadership behaviors not included in the adaptive leadership framework. The analysis provided support for the following adaptive leadership with authority sub-constructs: Distinguish Between Adaptive and Technical Challenges; Identify the Stakeholders and Their Losses; Create the Holding Environment; Regulate the Distress to maintain focus on adaptive work; Give the Work Back; and Use of Self as a diagnostic and intervention instrument. The narrative data did not support Protecting Voices of Leadership without Authority. The combination of the narrative data and scale pointed to Give the Work Back, Use of Self, and Create the Holding Environment as the most important elements in adaptive leadership with authority. This dissertation is accompanied by a de-identified data file [xls] and the author's MP4 video introduction. This dissertation is available in open access at AURA: Antioch University Repository and Archive, http://aura.antioch.edu/ and Ohiolink ETD Center, https://etd.ohiolink.edu/

Keywords: Adaptive Leadership, Adaptive Challenges, Adaptive Change, Change Theories, Second-Order Change, Leading Change, Wicked Problems, Leadership Development, Complex Adaptive Systems, Transformational Leadership, Scale Development, Mixed Methods

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Chapter I: Introduction

Adaptive leadership (Heifetz, 1994; Heifetz & Linsky, 2002; Heifetz, Grashow, & Linsky, 2009a, 2009b) starts with the position that there are two kinds of challenges: technical and adaptive. Technical problems have an existing solution and do not require significant learning; often, one can find an expert to apply the required solution. Adaptive challenges, on the other hand, demand that leaders engage in learning. Kegan (1994) and Scharmer and Kaeufer (2010) have pointed out the complexity of the world we live in. Complex issues in the form of technology, globalization, and the rapid pace of change test the skills of leaders every day (Heifetz, 2006). Increasingly, leaders are facing a significant number of adaptive challenges. For instance, less than half of the problems faced by managers today lend themselves to existing capabilities. The remaining problems, however, require developing new capabilities and methodologies (Alexander, 2006). Over a third of the problems faced by managers today can be considered adaptive (Alexander, 2006)—problems that require a new repertoire of actions, learning, and a change of mindsets, assumptions, or values. Adaptive leadership is suited for dealing with complexity and provides a framework for dealing with complex challenges. It departs from traditional heroic leadership approaches (Tourish, 2008) in that the leader does not provide all of the solutions and answers (Fletcher, 2002; Heifetz, 1994); the leader is not implicitly assumed to be an expert. Adaptive leadership advances the notion that leadership does not have to be tied to a particular position. Heifetz (1994) made the distinction between leadership with authority and leadership without authority. The former is linked to a formal position, while the latter is not. Both offer advantages and drawbacks, as will be explored in this dissertation.

Problem Statement

Consistent with Northouse's (2015) observation about the lack of empirical research on adaptive leadership, I found a scarcity of quantitative research on the topic. I ascribed the lack of research to the absence of a validated scale to measure adaptive leadership. Without a validated scale, it is impossible to quantitatively test hypotheses about adaptive leadership or generalize findings.

Research Questions

Based on my review of the research, I established that there is a lack of a scale to measure adaptive leadership with authority. Thus, this dissertation identified the following research questions:

1. What statements constitute a valid and reliable scale that can measure adaptive leadership with authority?
2. What factors emerge from factor analysis with items designed to measure adaptive leadership with authority?
3. What is the relationship between the seven proposed adaptive leadership with authority concepts and the factors resulting from the factor analysis?
4. What correlations exist between the factors that emerge from the factor analysis?
5. What behaviors of the boss contribute to the success of adaptive leadership with authority?

The Significance of the Study

When adaptive leadership training is used with large numbers of participants, there is a lack of a survey-based instruments to assess behavior change. Instead, one has to rely on labor-intensive qualitative methods to verify results. The development and validation of the

adaptive leadership with authority scale would allow direct comparison of different training interventions. Moreover, it would allow results to be generalized.

As part of the scale development, this dissertation established the conceptual distinctiveness of the adaptive leadership construct. It highlighted the similarities and, more importantly, the differences between adaptive leadership and transformational leadership (Bass, 1985), as well as the differences between adaptive leadership and complexity leadership (Uhl-Bien, Marion, & McKelvey, 2008). Furthermore, it argued that adaptive challenges and wicked problems—problems that are ill-defined (Rittel & Webber, 1973)—are not the same, a point of confusion among scholars.

In a related vein, without establishing the factorial and content validity of the scale in this dissertation, it would be impossible to empirically establish discriminant validity of adaptive leadership construct. The development and validation of the scale allows researchers to identify mediators and moderators of adaptive leadership, further contributing to the development of practice.

Finally, the qualitative portion of the study provided support for some of the adaptive leadership framework prescriptions.

Purpose of the Study

The purpose of the study was to develop and validate a scale that measures adaptive leadership with authority in a general population. The study addressed adaptive leadership with authority as it relates to the respondents' boss. Moreover, the qualitative part of the study aimed to identify leader with authority behaviors that contribute to adaptive change and provide support for the adaptive leadership framework prescriptions.

Limitations

Most leadership studies erroneously assume that the leader is always the boss (Hunter, Bedell-Avers, & Mumford, 2007). This study was concerned with developing a scale for adaptive leaders with authority. Nonetheless, it acknowledged the presence of leadership without authority elsewhere in an organization. Moreover, as adaptive leadership is a wide-ranging phenomenon (Northouse, 2015), the scale statements did not capture every single behavior of an adaptive leader; instead, the scale statements focused on the essence of adaptive leadership.

Scale factorial validity and reliability estimation were established in relationship to the sample population. Use with other populations will need revalidation, which would require a study beyond the one proposed in this research. Moreover, this scale uses North American English. Use outside the United States and Canada might require addition, modification, or removal of items. As the scale validation employed convenience sampling through my social media network and Mechanical Turk, the limitations of such methodologies will apply.

The Researcher's Positioning

Personal background. My interest in the topic of adaptive leadership is the result of my experience in leading a change effort in my family's business, a yogurt processing plant. I had approached the change effort largely as a technical effort involving the implementation of the International Standards Organization (ISO) 9000 quality management system. At the time, I did not account for the hardship involved in changing entrenched habits, dysfunctional values, and flawed assumptions. I had failed in engaging the key stakeholders or to account for their losses. As a result, individuals in the organization generally engaged in adaptive work avoidance and focused on the technical aspects of the work. Sadly, the change effort resulted in little change.

Following exposure to adaptive leadership in my Master's program, I have successfully used the adaptive leadership elements of distinguishing between adaptive and technical problems, giving back the work (at the individual level), and recognizing losses from change. Through exposure to 60 organizations over the last 20 years, I experienced firsthand the scarcity of adaptive leadership.

I spend substantial amounts of time thinking about global problems: work, hunger, sustainability, social justice, and global warming. I believe these problems can be solved in the next five years with existing—not future—technology if we can get the stakeholders to engage in productive conflict and distribute their losses. This has served as an impetus for spreading adaptive leadership and developing this scale.

Researcher bias. My personal social network sample includes mostly individuals with higher educational attainment. This is partially caused by my bias for higher levels of education. Still, this was offset by the Mechanical Turk sample, which accounted for the majority of the respondents (97.2%) and included fewer individuals with advanced degrees.

While the scale avoided the use of biased language, based on the review of literature, the scale covered aspects of adaptive leadership that related to engaging in conflict and using direct forms of communication, such as discussing undiscussables. This is the result of adaptive leadership being developed in the United States. The scale overcomes this bias by selecting a North American sample consistent with this view of conflict and claims no validity outside this target population.

Several other biases have contributed to my selection of this topic: First, my bias towards "below-the-neck" (Heifetz et al., 2009b, p. 25) phenomena, the home of values and beliefs, has resulted in emphasizing these aspects in my discussion of adaptive change and in arguing that

they form the key distinguishing factor for adaptive leadership. Second, my bias towards the precise use of language contributed to the creation of the sections covering wicked problems and complexity leadership. Third, my partial distrust of authority has contributed to my challenging the transformational agenda and making arguments against heroic forms of leadership. Finally, my systems thinking bias has contributed to emphasizing the systemic aspects of adaptive leadership both as part of the discussion and the scale.

Glossary

360-degree feedback: Gathering perceptions about a person's actions and the impact of those actions from the person's supervisor(s), direct reports, coworkers, other members of project teams, customers within and without the organization, and suppliers (Lepsinger & Lucia, 2009).

Acting politically: Acting based on the assumption that no one acts only as an individual but represents a set of other party loyalties and expectations (Heifetz et al., 2009b).

Activist challenge: Creating awareness to the fact that there is a problem or a threat (Williams, 2005).

Adaptive challenges: Systemic challenges that have no immediate solution because in order to solve them, stakeholders have to change their habits, assumptions, behavior, or values. Solutions to these challenges are not easily created and require conflict, experimentation, unlearning of old habits/assumptions/values, and learning new ones (Heifetz, 1994).

Adaptive change: Change that requires some or all of the stakeholders to develop new habits, assumptions, values, or behaviors. This change is usually resisted both consciously and unconsciously (Heifetz, 1994).

Adaptive leadership: Leadership style that helps groups, organizations, and societies deal with adaptive challenges (Heifetz, 1994).

Adaptive leadership with authority: Adaptive leadership as exercised from a position of power.

Adaptive leadership without authority: Adaptive leadership as exercised while lacking positional power.

Adaptive learning: Learning that requires unlearning of old values, assumptions, or mindsets and learning new ones. It can often be painful (Heifetz, 1994).

Adaptive work: "The learning required to address conflicts in the values people hold, or diminish the gap between the values people stand for and the reality they face. Adaptive work requires a change in values, beliefs, or behavior" (Heifetz, 1994, p. 22).

*Administrative leadership: "*Leadership grounded in traditional, bureaucratic notions of hierarchy, alignment, and control" (Uhl-Bien et al., 2008, p. 201).

Authority: Authority tied to a formal position. Power is granted to an authority in exchange for service.

Boss: The person who the survey respondent directly reports to. Moreover, the respondent's boss is responsible for evaluating their performance.

Boundary buffering: A strategy of withdrawal whereby an entity closes itself off from being exposed to the environment. An entity buffers to safeguard itself from external uncertainties and disruptions, thereby increasing the chance of rational internal action (Scott, 1998).

Boundary spanning (Crossing boundaries): Reaching out into the external "environment to obtain important resources and support" (Faraj & Yan, 2009, p. 606).

Complex adaptive system (CAS): "Neural-like networks of interacting, interdependent agents who are bonded in a cooperative dynamic by common goal, outlook, need, and so on" (Uhl-Bien et al., 2008, p. 201).

*Construct proliferation: "*The accumulation of ostensibly different but potentially identical constructs representing organizational phenomena" (Shaffer, DeGeest, & Li, 2015, p. 80).

Convergent leadership mechanism: "The influential increment that moves the system dynamically along a perceived convergence path" (Hazy, 2008, p. 377).

Creative challenge: When a group can go no further while continuing its current practices. "To break through the wall, transcend the current paradigm, and advance to the next level of performance, the people must create" (Williams, 2005, p. 163).

Crisis challenge: "A perilous predicament in which the group is under attack from forces within or without. It is a sudden, unpredictable event that jeopardizes the accrued value and resources of the group or enterprise" (Williams, 2005, p. 189).

Development challenge: "People's advancement is dependent on their capacity to develop their latent capabilities and take advantage of new opportunities. The development of those capabilities will allow the people, or their organization, to flourish and prosper at a higher level" (Williams, 2005, p. 89).

Dynamic complexity: "A delay between cause and effect in space or time" (Scharmer & Kaeufer, 2010, p. 21).

Edge of chaos: An apparently stable region just before an unpredictable change. Like cultural outcomes, the radical change is not predictable. But it is patterned and it does have knowable bounds" (Dubinskas, 1994, p. 357).

Elephants in the room: Sensitive and disruptive issues that a group avoids acknowledging and discussing.

*Enabling leadership:"*Leadership that structures and enables conditions such that CAS are able to optimally address creative problem solving, adaptability, and learning" (Uhl-Bien et al., p. 201).

Evoking strategy: Inspiring a group to face reality (Williams, 2005).

Family resemblance relationship: "A set of items of the form AB, BC, CD, DE. . . . Each item has at least one, and probably several, elements in common with one or more other items, but no, or few, elements are common to all items" (Rosch & Mervis, 1975, p. 575).

Flexible and adaptive leadership: Involves changing behavior in appropriate ways as the situation changes (Yukl & Mahsud, 2010, p. 81).

Going to the balcony to view reality: Standing apart from daily activities and concerns to see the big picture (Laurie, 2000).

Generative leadership: "The specific leadership activities that generate possible futures and prepare it for adaptation" (Hazy, 2008, p. 363).

Holding environment: A place to hold the stress and distress of adaptive work and hold attention on adaptive challenges—a place where the conflicts between the different stakeholders are brought out into the open in a safe environment (Heifetz, 1994).

Immunity to change: An intervention whereby participants identify an improvement goal and the real reason they have not been able to gain traction on their goal. The process involves exploring behaviors that one engages in that counter the improvement goal, identifying a hidden competing commitment that explains the counterproductive behaviors, and making an educated guess regarding an assumption that has hitherto been outside the participant's conscious

awareness. Following identifying this assumption, the participants design a plan to confirm and overturn the assumption in question (Kegan & Lahey, 2009).

Maintenance challenge: The idea that "not all leadership work is about change. Sometimes the challenge is to hold things together—to protect essential resources, maintain core values, and keep the enterprise from falling apart" (Williams, 2005, p. 141).

Necessary but sufficient concepts: Concepts that are "defined in terms of a logical conjunction (AND) of attributes and follow the structural rule that an object qualifies for membership if and only if all *n* attributes are present" (Podsakoff, MacKenzie, & Podsakoff, 2016, p. 164).

Orchestrating the conflict: Creating and leading the process of getting parties with differences to work through conflict as opposed to resolving the differences (Heifetz et al., 2009b).

Organization: A group of people working together as part of corporate, not-for-profit, or government system, but excluding broader social and political arenas.

Priming: The activation of varied mental constructs unconscious to individuals through perception of extraneous stimuli (Bargh & Chartrand, 2000).

Provoking (strategy): Strategy to challenge a group to face reality and deal with the problem (Williams, 2005).

Psychological safety: "A shared belief that [a] team is safe for interpersonal risk taking" (Edmondson, 1999).

Schemata: Mental templates that give experience form and meaning (Hastie, 1981).

Second-order change: Change in shared schemata in an organization (Bartunek & Moch, 1994).

Self-organization: When a complex, interdependent system is pushed far enough from equilibrium without an obvious plan and without the control of any single individual component, the system spontaneously reorganizes itself (Eoyang, 1997).

Slack: "The disparity between the resources available to the organization and the combination of demands for these resource" (Bourgeois & Singh, 1983, p. 45).

Social complexity: "The result of diverse values, interests, and worldviews among stakeholders" (Scharmer & Kaeufer, 2010, p. 21).

Tame problems: Problems that "are definable and separable and maybe have solutions that are findable" (Rittel & Webber, p. 160).

Technical challenges: Challenges that can be solved with existing knowledge and do not require a change in values, assumptions, or habits (Heifetz, 1994).

Technical learning: Learning that does not require a change in values, assumptions, or mindsets. While it might not be easy, it does not generate a significant amount of distress in the learner (Heifetz, 1994).

Third-order change: "A process in which schemata themselves become objects for continuous cognitive innovation and development. . . . understanding schemata as objects therefore requires that the analyst be exposed to a source of meaning beyond that which can be conceptually grasped and understood" (Bartunek & Moch, 1994, p. 25).

Transition challenge: "When some of the values and mind-sets of a group are no longer useful in dealing with the group's challenges. The leadership's work is to move the group to a new state of operating and change the loyalties, mind-sets, and values of the group" (Williams, 2005).

Unifying leadership: Leadership style that heightens agent interaction to create a collective identity, demarcate boundaries, and permit the system to behave as a unity in the environment (Hazy, 2008).

Use interpretations experimentally: Considering an interpretation of an event or a challenge as a hypothesis and not a fact. Testing this hypothesis to confirm or reject the interpretation (Heifetz et al., 2009b).

Wicked problems: Ill-defined problems that "rely upon elusive political judgment for resolution" (Rittel & Webber, 1973, p. 160).

Outline of Subsequent Chapters

In Chapter II, I review the literature on adaptive leadership. This includes an expansive discussion of the adaptive leadership framework, a critique of the literature, identification of gaps and, finally, a discussion of the relationship between adaptive leadership and other constructs. In Chapter III, I discuss the method for development and validation of the adaptive leadership with authority scale, including expert validation, along with the sample selection. In Chapter IV, I discuss the results. I conclude the dissertation with Chapter V, where I discuss implications of the findings for practice and leading change, limitations of the current study, and some of the implications for future research.

Chapter II: Literature and Research Review

The following research and literature review covers (1) adaptive leadership, (2) adaptive challenges/adaptive change (Heifetz, 1994; Heifetz & Linsky, 2002; Heifetz et al., 2009b), and (3) relationship of adaptive leadership to other constructs.

Search Strategy

I used the following databases: Psycinfo, ABI/Inform, and Business Source Complete, focusing on the period between 2000 and 2016 and selecting peer reviewed journals. I used the search terms "adaptive," "leadership," and "Heifetz." Examination of the articles from the index searches revealed that the articles often dealt with either complexity leadership (Uhl-Bien et al., 2008), flexible and adaptive leadership (Yukl, 1999), or the adaptive leadership framework developed by Glover, Rainwater, Jones, and Friedman (2002), but they did not address Heifetz's work. Additionally, a large number of the articles made mention of adaptive change, or adaptive challenges, but were not concerned with adaptive leadership. This also proved to be the case with my Google and Google Scholar searches, where articles mentioned Heifetz's work in passing. My deep search in 20 high-impact-factor leadership journals covering the same time period did not turn out relevant results. After examining the articles from the bibliographic searches for their relevance, I mined their reference sections for citations.

For my second search strategy, I used Google Books and Amazon to search for books related to adaptive leadership; this search was fruitful, and books relevant to the topic are discussed as part of this review. The area where I had the most success was in dissertation studies; starting in 2009, a significant number of dissertations on adaptive leadership exist. Examining the dissertations was laborious due to the fact that sometimes the dissertations were discussing complex adaptive systems (CAS) or adaptive change, not adaptive leadership. In

addition to examining the dissertations for their relevance to adaptive leadership, I mined their reference sections for relevant articles and books.

I used recommendations from the website citefast.com and articles designated as related to the topic in the cover page of some of the articles. Moreover, using the web of science, I identified the most-cited articles related to the topic and mined them for citations. I conducted a forward search for both the web of science and Google Scholar results.

After conducting the initial search on adaptive leadership and reviewing the literature, I conducted a second search with the search terms “adaptive leadership” and “scale” to confirm that there were no additional scales to measure adaptive leadership besides the ones I identified and discuss below. This search did not produce additional results.

Organization of the Review

The rest of this literature review is organized into three parts: The first part explicated the adaptive leadership framework. In the second part, I reviewed the literature on adaptive leadership, including dissertation studies covering the topic. In the final part, I discussed the relationship of adaptive leadership to other constructs.

The Adaptive Leadership Framework

As a starting point, Heifetz (1994) distinguished between adaptive challenges and technical problems. Technical problems (Type I) have an existing solution and do not require much learning to solve them; often, one can procure an expert to apply the required solution. Beyond that, Heifetz broke down adaptive challenges into Type II and Type III; in Type II, both the group and the leader have to engage in learning as no solution exists for the problem in its entirety. However, some aspect of the problem is technical and therefore can be solved using a technical solution. As indicated in Table 2.1, the difference between Type II and Type III is that

for the latter, there is more learning and work by the group than there is for the leader. Heifetz proposed the following criteria to identify a Type III adaptive challenge (here in reference to a patient-doctor situation):

> The problem definition is not clear-cut, and technical fixes are not available. The situation calls for leadership that induces learning when even the doctor does not have a solution in mind. Learning is required both to define problems and implement solutions. (p. 75)

Table 2.1

Situational Types (in Heifetz's Example of Leadership by a Physician)

Situation	Problem definition	Solution and implementation	Primary locus of responsibility for work	Kind of work
Type I	Clear	Clear	Physician	Technical
Type II	Clear	Requires Learning	Physician and patient	Technical and adaptive
Type III	Requires Learning	Requires Learning	Patient > physician	Adaptive

Note: From *Leadership Without Easy Answers* by Ronald A. Heifetz, Cambridge, MA: The Belknap Press of Harvard University Press, p. 76. Copyright 1994 by the President and Fellows of Harvard College. Used with permission.

While Heifetz used this table in reference to a patient-physician situation, it was intended to generalize for leadership situations where physician is replaced by leader with authority or boss.

Heifetz et al. (2009a) defined an adaptive challenge as "the gap between the values people stand for (that constitute thriving) and the reality that they face (their current lack of capacity to realize those values in their environment)" (p. 301). They further explained that,

> adaptive challenges are typically grounded in the complexity of values, beliefs, and loyalties rather than technical complications and stir up intense emotions rather than dispassionate analysis. For these reasons, organizations often avoid addressing the value-laden aspects and try to get through the issue with a technical fix. (Heifetz et al., 2009b, p. 70)

In other words, organizations avoid dealing with the emotional and psychological aspects of change. Instead, they address the problem as if the existing solutions are suitable.

Adaptive leadership stimulates adaptive learning by asking tough questions and by reframing people's expectations. This kind of learning required by adaptive leadership and adaptive change is not limited to learning of new skills; it is a learning of new ways of acting and being, a learning of new relationships, and a "learning to address conflicts in the beliefs and values people hold" (Heifetz, 1994, p. 22). Moreover, it is a learning that requires unlearning (Heifetz & Laurie, 2003; Laurie, 2000) and learning from others to understand problems differently. This kind of learning is difficult and can be accompanied by a range of negative feelings: psychological pain, a sense of loss, stress, distress, anxiety, and suffering (Heifetz, 1994), as well as incompetence, irrelevance, and betrayal (Heifetz et al., 2009b). Because of these negative feelings, groups resist change and the required learning and engage in adaptive work avoidance. They focus on technical issues instead of the adaptive challenge, blame the figure of authority for the problem or lack of a solution, scapegoat others in the group for their problems, focus on external enemies, deny that problems exist, or jump to conclusions. Thus, one of the key tasks for an adaptive leader is to overcome the tendency to avoid adaptive work and focus attention on adaptive issues. It is noteworthy that adaptive work avoidance will manifest itself differently by culture (Heifetz, 1994); nonetheless, there are two common forms: diversion of attention and displacing responsibility (Heifetz, 2006).

In adaptive leadership, the leader intervenes to create movement on adaptive challenges. However, adaptive challenges create distress. If the distress is too high, there might be a backlash against the leader; people will "fight, flee, or freeze" (Heifetz et al., 2009b, p. 66). Thus, the leader has to keep the distress within a tolerable zone. Conversely, if the distress is too low, then

there is little movement on the adaptive challenges. Heifetz (1994) used the metaphor of a pressure cooker to describe this dynamic: when pressure is too high, the leader lowers the heat; when things are not moving forward, the leader raises the heat. There is similarity between the optimal zone for adaptive work and the concept of flow as described by Csikszentmihalyi (1990). An individual is in the flow state when she is immersed in the task, has a high level of focus, and has a distorted sense of time where a few hours can be perceived as seconds and seconds can be perceived as hours. In order for a person to reach this state, there is an optimal zone where task difficulty and the level of skill are closely matched. If the task difficulty is too high, the person gets frustrated and abandons the task. Conversely, if the task is too easy, then the task is not challenging, and boredom ensues. The key for both adaptive leadership and flow is finding the optimal zone. At the same time, because adaptive leadership is interpersonal, that might be significantly harder.

The psychological environment in which adaptive work takes place is called a holding environment. It is a place to hold the stress and distress of adaptive work and hold attention on adaptive challenges, a place where the conflicts between the different stakeholders are brought out to the open in a safe environment. One needs "to create or strengthen the holding environment to provide safety and structure for people to surface and discuss the particular values, perspectives, and creative ideas they have on the challenging situation they all face" (Heifetz et al., 2009b, p. 155). Ways to strengthen the holding environment include the following:

1. Shared values and purpose: These have to be truly shared, not just consist of a statement on a company's website.

2. Shared language: Teams and organizations tend over time to create their own language. This language might not be decipherable by an outsider.
3. Lateral bonds of affection, trust, and camaraderie: For example, people at the same positional level form friendships and express affection and appreciation.
4. Vertical bonds of trust in authority figures and the authority structure: For example, employees trust that the authority figure cares for them and will treat them fairly.
5. Elements of the physical environment: For example, this includes comfortable chairs and round tables (Heifetz et al., 2009a, pp. 155–156).

The conflicts in adaptive leadership are not interpersonal conflicts, though they might initially present themselves as such; the goal of adaptive leadership is to allow for disagreement on issues, perspectives, or values (Heifetz et al., 2009b) instead of attacking personal character.

For Heifetz (1994), leadership was strictly defined in relationship to adaptive work and dealing with adaptive challenges. The strategies that leaders can employ to create movement on an adaptive issue will depend on whether they possess authority or lack it (Heifetz, 1994). All authority relationships involve the same pattern: giving power in exchange for service (Heifetz et al., 2009a). Authority provides protection, direction, conflict control, orientation, and maintenance of norms (Heifetz, 1994). Leadership with authority comes with advantages and limitations. On the positive side, a leader controls the holding environment, creates structure, sees the big picture, and knows the different issues facing the organization or community. Additionally, authority presents, "resources to (a) direct attention to the issues, (b) gather and test information—perform reality testing, (c) manage information and frame issues, (d) orchestrate conflicting perspectives, and (e) choose the decision making process" (Heifetz, 1994, p. 113). Because of their position, leaders with authority lack an up-close view of issues and have to deal

with multiple constituents with different issues. As a result, they have difficulty in focusing on a single issue. According to Heifetz (1994), a leader with authority

1. identifies the adaptive challenge and diagnoses "the situation in light of the values at stake, and unbundles the issues that come with it" (p. 128);
2. keeps the distress level within an endurable range;
3. keeps attention on ripening issues and not distractions, and responds to work avoidance;
4. gives the work back to the group at a level they can handle; and
5. protects "voices of leadership without authority" (p. 128), providing cover to those who ask tough questions and create distress.

Adaptive leadership intervention strategies include asking questions regarding problem definition and possible solutions, showing the reality of external threats, disorienting people from their existing roles, allowing for conflict, and challenging norms. Heifetz (1994) described these behaviors as walking the razor's edge: "Leadership is a razor's edge because one has to oversee a sustained period of social disequilibrium during which people confront the contradictions in their lives and communities and adjust their values and behavior to accommodate new realities" (p. 127). To decrease stress level in the holding environment a leader with authority can take action. Conversely, when they do not take any action, the stress level is likely to increase.

Leadership without authority. Heifetz (1994) argued that people without authority erroneously assume that they have to be in a position of authority to lead change. He provided a broad definition to describe leadership without authority:

> When we speak of leadership without authority, we are referring to a very large set of stances, from the person operating from the margins of society even to the senior authority figure who leads beyond his pale of authority, challenging either his own

> constituents' expectations or engaging people across the boundary of his organization who would ordinarily or preferably pay him no mind. (Heifetz, 1994, p. 186)

Heifetz (1994) suggested that while leadership with authority offers advantages, there are also advantages for leading without authority. First, people without authority have more freedom for creative deviance. Second, they can focus on a single issue. Third, they have information from the frontlines that a figure of authority cannot access. Nonetheless, leadership without authority comes with its own disadvantages. First, leaders without authority have to think and act differently than someone with formal authority; they have to avoid becoming a lightning rod for an issue. Second, they lack the same access to information that an authority figure has. Therefore, they determine ripeness of issues and timing for interventions by reading the reaction of the authority figure (Heifetz, 1994). Moreover, to succeed, they have to avoid using the authority figure as the "audience for action" (p. 208). Instead, they should focus on stakeholders to alter the actions of the authority figure. Their main tactic to influence the distress level is to modulate their provocation. Figure 2.1 depicts the relationship between leadership with and without authority in the adaptive leadership framework. Total adaptive leadership in an organization involves adaptive leadership with and without authority. The main interaction between the two, from the point of view of the authority figure, happens when the authority figure protects a creative deviant or a dissenting voice in the organization who points to an adaptive challenge.

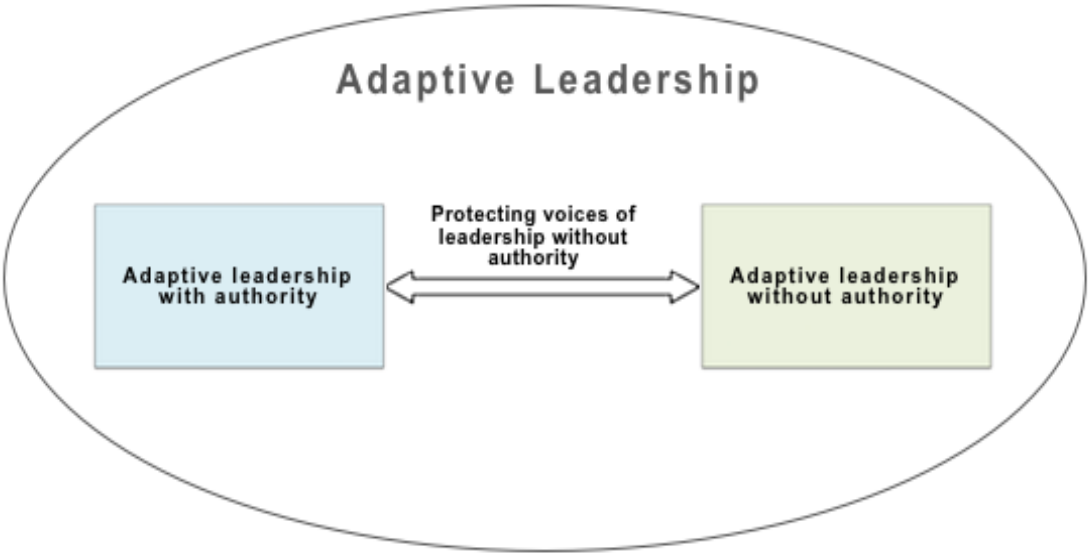


Figure 2.1. Adaptive leadership—Leadership with and without authority. Created by the author based on adaptive leadership as presented in Heifetz (1994) and Heifetz et al. (2009b).

Difficulty in adaptive leadership. Adaptive leadership is difficult because leaders must stop being the problem solvers and look for solutions to problems "in the collective intelligence of employees at all levels" (Heifetz & Laurie, 1997, p. 124). Additionally, they must help people navigate the distress of adaptive change. Moreover, adaptive work is dangerous because of the losses it creates: "People cannot see at the beginning of the adaptive process that the new situation will be any better than the current condition. What they do see clearly is the potential for loss" (Heifetz & Linsky, 2002, p. 13). The losses can manifest as losses of jobs, traditions, loyalty, competence, and reporting relationships (Heifetz, 2006). To minimize the dangers of adaptive work, leaders have to be highly reflective and politically astute, while at the same time highly experimental; they have to alternate between action and reflection. Heifetz (1994) used the metaphors of "going to the balcony" and "moving on the dance floor" to describe this dynamic. Subsequently, these were described as follows:

> If you stay moving on the dance floor, all you will see will be the people dancing with you and around you. Swept up in the music, it may be a great party! But when you get on the balcony, you may see a very different picture. (Heifetz et al., 2009b, p. 7)

Building on Heifetz's (1994) earlier work, Heifetz and Linsky (2002) expanded the range of the actions that a leader has to take to mitigate the dangers of adaptive work. They recommended that leaders manage their hungers: The need for control, the need for admiration and importance, and the need for intimacy. Additionally, the authors provided tools for anchoring one's self. These tools include distinguishing the self from the role, keeping confidantes, and keeping a sanctuary. Heifetz and Linsky described a sanctuary as "a place of reflection and renewal, where you can listen to yourself away from the dance floor and the blare of the music, where you can reaffirm your deeper sense of self and purpose" (p. 204).

Adaptive leadership in practice. Adaptive leadership is a repetitious process involving three activities: observing patterns and events, interpreting what one has observed and designing interventions to deal with the adaptive challenge. The most recent version of the framework (Heifetz et al., 2009b) includes the following steps:

1. Diagnosing the system. This step means diagnosing both the adaptive challenge and the political landscape of stakeholders.
2. Making interpretations. This step includes shifting the perspective of groups on three levels: from individual to systemic, from conflict avoidant to conflictual, and from technical to adaptive.
3. Designing interventions: Interventions are designed to draw attention to adaptive challenges, to increase or decrease distress, and to overcome the tendency for adaptive work avoidance.
4. Acting politically. This is accomplished by expanding informal authority, finding allies, managing the authority figure, protecting voices of dissent, taking responsibility for the losses, and keeping connected with the opposition.

5. Creating a holding environment and orchestrating conflict. The latter involves preparing by identifying the factions and their losses, establishing ground rules, getting each view out in the open, articulating the competing positions and claims, encouraging the management and acceptance of losses, generating ideas for and commitment to experiments, and instituting peer consulting.
6. Seeing one's self as a system: Identifying one's loyalties, triggers, and tuning, expanding one's range of interventions, understanding the different roles that one plays, and articulating one's purpose.
7. Deploying one's self: Staying connected to one's purpose, engaging courageously, using inspiration, and running experiments.

In addition to a high level of detail in the framework, the authors recognized four adaptive challenge archetypes: a gap between behavior and espoused values; competing commitments that require "painful choices" (Heifetz et al., 2009b, p. 80); exposing undiscussables; and adaptive work avoidance.

Mobilizing people to deal with adaptive challenges using adaptive leadership is a short- to medium-term endeavor. In the long run, however, the goal is to build adaptive capacity in an organization by building an adaptive culture. Heifetz et al. (2009b) identified the characteristics of an adaptive organization as follows:

1. "Elephants in the room" are named. This means identifying and naming sensitive topics that people avoid discussing.
2. Responsibility in the organization is shared. People feel responsible for the whole and not just their part.

3. Independence in the organization is encouraged, rather than dependency on the leader.
4. Followers are developed into leaders. Managers ensure the creation of a leadership pipeline.
5. Reflection and continuous learning are incorporated into the fabric of the organization.

Assumptions of adaptive leadership. Heifetz and his colleagues were explicit about some of their assumptions. First, groups and individuals are doing their best given their capacity and the challenges that they are dealing with. Work avoidance is symptomatic of people working on problems. Second, leadership must elevate the followers by increasing their adaptive capacity and operate beyond just meeting their needs. Third, groups and individuals engage in work avoidance and seek equilibrium unconsciously (Heifetz, 1994). Fourth, leaders are able to maintain their poise between interventions: "Holding steady in the heat of action is an essential skill for staying alive and keeping people focused on the work" (Heifetz & Linsky, 2002, p. 141). Fifth, each individual is not acting just as an individual but embodies his constituents' expectations, loyalties, and pressures. Sixth, change work requires losses, conflict, and disruption (Bernstein & Linsky, 2016). Seventh, interventions will need mid-course correction (Heifetz et al., 2009a).

In addition to the explicit assumptions, I was able to infer the following implicit assumptions as indicated in Table 2.2.

Table 2.2

Implicit Assumptions of Adaptive Leadership

Implicit assumption	**Evidence for assumption**
A leader does not provide a solution because the problem does not have an existing solution.	Adaptive challenges have no existing solution.
A leader has limited or no control over the actions of others.	Once a leader unleashes the energy to deal with an adaptive issue, they cannot control the outcome (Heifetz et al., 2009b). The leader does not control what people do with their interventions (Heifetz et al., 2009b).
A leader has control over themselves.	A leader has some control over solving their own problems (Heifetz et al., 2009b).
A leader with authority has control over the holding environment.	Senior authority has the ability to manage the holding environment (Heifetz, 1994).
A leader has the minimum level of ability required for diagnosing challenges and intervening in a social system.	Treatments can be too risky and costly to try without having some level of confidence that the diagnosis is accurate (Heifetz et al., 2009b). An adaptive leader should consider the skills they have and their level of competence when they design their interventions (Heifetz et al., 2009b, pp. 35–36). Adaptive leadership is about will and skill (Heifetz et al., 2009b).
A leader controls their intervention.	The leader tailors their interventions to the individuals (Heifetz et al., 2009b).
A leader with authority possesses a minimum level of expertise to do some of the work that the followers cannot handle.	The doctor's expertise allows them to define the problem and recommend solutions that may work (Heifetz, 1994). A leader temporarily reclaims ownership of tough issues to reduce the level of distress in the system (Heifetz et al., 2009b).

Table 2.2 (continued)

Implicit assumption	Evidence for assumption
The adaptive work-distress level relationship follows a curvilinear behavior; it can be visualized as an inverted U shape.	When the distress is too high, adaptive work comes to a halt. When it is too low, there is no adaptive work.
Adaptive change can be slow.	The leader needs patience and determination (Heifetz et al., 2009b).
	The leader should give the work back at a rate people can handle.
	Changing habits, mindsets, and values can take time.
	Learning has to take place after unlearning.
There is a two-way influence in adaptive leadership.	Leadership with authority protects leadership without authority. Leadership without authority can point to the adaptive challenge and has to be conscious of the reaction of the authority figure (Heifetz, 1994).
Two-way influence in adaptive leadership is asymmetric.	The leader's protection can be absent due to incompetence or choice.
Followers have to have a minimum level of adaptive capacity to take back some of the adaptive work.	If followers do not have a minimum capacity, then they cannot take the work back. If they cannot handle any of the work, then they would be terminated.
Participation of stakeholders is important.	To think politically, one has to view the organization as a web of stakeholders (Heifetz et al., 2009b, p. 90).

Significance of the framework. The distinction between authority and leadership proposed by Heifetz has some resemblance to the argument that management and leadership are different (Zaleznik, 1977). However, by focusing on the aspect of authority in a managerial position, Heifetz was able to account for behaviors of individuals who go beyond their authority to achieve change. The management-leadership distinction fails to account for this. The second distinction of leadership with and without authority explains behaviors of individuals who were

able to affect change and focus entire societies on adaptive challenges without having formal position. For instance, Martin Luther King, Jr. and Mohandas Gandhi, despite lacking formal authority, were able to mobilize millions to tackle their societies' challenges. Heifetz's authority-leadership framework provides a compelling answer for how organizations and leaders can balance management and leadership in times of change.

In the following section, I detail the scholarship on adaptive leadership beyond the initial framework. The section covers articles, books, and dissertations that are relevant for the topic.

Adaptive Leadership Scholarship

Heifetz's colleagues have significantly expanded the scholarship on adaptive leadership. Laurie (2000) posited that the mix of adaptive and technical challenges changes depending on one's level in the organization. In lower levels of the organization, the problems are mainly technical. As one moves up the hierarchy, there is a shift towards more adaptive challenges. In fact, Laurie suggested that at the highest level of the organization, the problems are mainly adaptive. In addition to the adaptive/technical dimension, Laurie made the distinction between operational and strategic issues. Similar to adaptive issues, strategic issues tend to be concentrated at the top of the organization. While solutions for operational problems usually need adaptive work, solutions to strategic problems always do. He proposed that leaders of adaptive change must act as facilitators (p. 29).

Laurie (2000) and Heifetz (1994) emphasized not providing the answers. Nonetheless, Heifetz never stressed creating a vision as part of adaptive leadership. Laurie, on the other hand, suggested that instead of creating a vision as the first step, leaders need to create intentions:

> Instead of the answers they offer questions and from the answers they create visions, what I call ambition, that will propel their troops to great heights. Ambition is what you want to be. Strategy is how you go about realizing it. (Laurie, 2000, p. 13)

For Laurie (2000) the real work of leaders involves the following seven acts:

1. Going to the balcony to view reality;
2. Communicating the reality to all levels of the organization;
3. Clarifying competing values;
4. Advocating changing values;
5. Promoting discussion and dialogue;
6. Controlling the level of distress; and
7. Moving responsibility for problem solving to the individuals who should solve these problems.

While these actions echo many of Heifetz's (1994) principles, noteworthy is Laurie's (2000) emphasis on communication and the role of advocacy for change; something Heifetz is silent on.

Laurie (2000) suggested that adaptive work requires dialogue, stating that he uses "the word dialogue to denote a series of exchanges of disparate ideas, discourse that is intended to produce enlightenment but not necessarily agreement" (p. 123). Heifetz and Laurie (1997) further suggested that leaders need to orchestrate conflict into a dialogue focused on the key issues; otherwise, work avoidance will ensue. Finally, Laurie (2000) proposed that three adaptive values must be present in corporate cultures for effective collective action. Each adaptive value has an interrelated competing value: trust and mistrust, respect and disrespect, and commitment and apathy.

Williams (2005), another colleague of Heifetz, extended the literature on adaptive leadership by delineating six kinds of common adaptive challenges: the crisis challenge, the transition challenge, the development challenge, the maintenance challenge, the creative

challenge, and the activist challenge. In a crisis challenge, the organization faces a potentially volatile situation that could endanger the life of the organization or some aspect of the prevalent order. The quandary is extremely serious, and time is of essence. In a transition challenge, it is possible to gain a great amount if the organization shifts from a current value set to a new one. In a developmental challenge, "people's advancement is dependent on their capacity to develop their latent capabilities and take advantage of new opportunities. The development of those capabilities will allow the people, or their organization, to flourish" (p. 89). In a maintenance challenge, a variety of limitations prevent the organization from improving, even if it had developed its latent abilities. In a creative challenge, a rare opportunity exists that requires the organization to break away from business as usual to take advantage of it. Finally, in an activist challenge, a refusal exists to face some aspects of reality that can advance organizational performance and quality of life. For Williams, these challenges, while distinct, can occur one at a time or in combination; thus, an organization can face multiple challenges at a time.

Williams (2005) suggested that a leader can use evoking and provoking strategies to help make movement on an adaptive challenge and draw attention to issues. He equated "evoking" with inspiring a group to face reality, such as Martin Luther King's "I have a dream" speech has done. Conversely, "provoking" aims to challenge the group to face reality and deal with the problem. Moreover, Williams added an important metaphor to the already rich set of metaphors employed in adaptive leadership:

> Change agents are attention managers—they intervene to get and keep the spotlight on interdependent problems. Big man leaders put the spotlight on themselves. They use prominence and dominance to get the group to follow them, because they believe that they know what needs to be done. (p. 25)

Williams (2005) also expanded the adaptive leadership framework by arguing that adaptive leaders have to engage in different kinds of boundary work to get traction on adaptive

challenges. Specifically, he identified four kinds of boundary work to take place between interdependent groups (2015): boundary crossing, boundary busting, boundary transcending, and bridge building. In boundary crossing, one has to "get groups, often with big differences and competing cultural narratives, to come together to appreciate the systemic nature of the problem, build a relational bridge, and adjust their values, practices, and priorities on behalf of adaptive change" (p. 58). In boundary busting, the leader "[breaks] a set of maladaptive practices and mindsets that hinder people's capacity to deal with reality" (p. 81). Boundary transcending "is a process of exploration, experimentation, and adventure—without any guarantee of success but the possibility of remarkable accomplishment" (p. 109). The work is to transcend the restricting "boundary by stimulating the creative process and thus helping the group discover something new—a solution to an intractable problem, an invention, or a way of living and working together" (p. 110). Finally, in bridge building, the leader creates a bridge between groups that connects the groups and promotes understanding.

Unlike Williams (2005), who focused on the political realm, and Laurie (2000), who has a pure business focus, Heifetz's third colleague and co-author, Linsky, decided to mix adaptive leadership with the field of design thinking. Bernstein and Linsky (2016) proposed that adaptive leadership is limited in that it offers few resources for identifying the elements of an imagined future or for creating specific interventions. Moreover, some find that adaptive leadership lacks excitement or inspiration; it fails to engage people in a way that provides fun, a spirit of collaboration, and observable signs of progress. Often people experience it as emotionally draining and negative in spirit. To overcome these limitations, the authors recommend combining the adaptive leadership steps of observation, interpretation, and intervention with

design thinking. This can be achieved by alternating between using design thinking and adaptive leadership, or by blending the steps of each concurrently.

Northouse (2012) suggested that adaptive leadership is linked to ethical leadership "because it deals with values: the values of workers and the values of the organizations and community in which they work. . . . It is an ethical perspective because it speaks directly to the values of workers" (p. 429). However, this is a weak connection. Coutu (2002) pointed out that values are neither bad nor good and can be unethical. Furthermore, adaptive leadership constructs a hierarchy of values, not in terms of their ethical effects, but based on their usefulness for adaptation and what is important for the stakeholders. This hierarchy is culturally specific and not universal (Heifetz, 1994). More recently, Northouse (2015) suggested that adaptive leadership is more follower-centric than leader-centric. Moreover, he claimed that the emphasis of adaptive leadership on mobilizing adaptive work makes it very different from other traditional leadership approaches that are focused on skills, behaviors, traits, or authenticity. He proposed that adaptive leadership has a service orientation, while combining ideas from biology, psychotherapy, and systems thinking. He created a diagram (Figure 2.2) delineating how adaptive leadership operates:

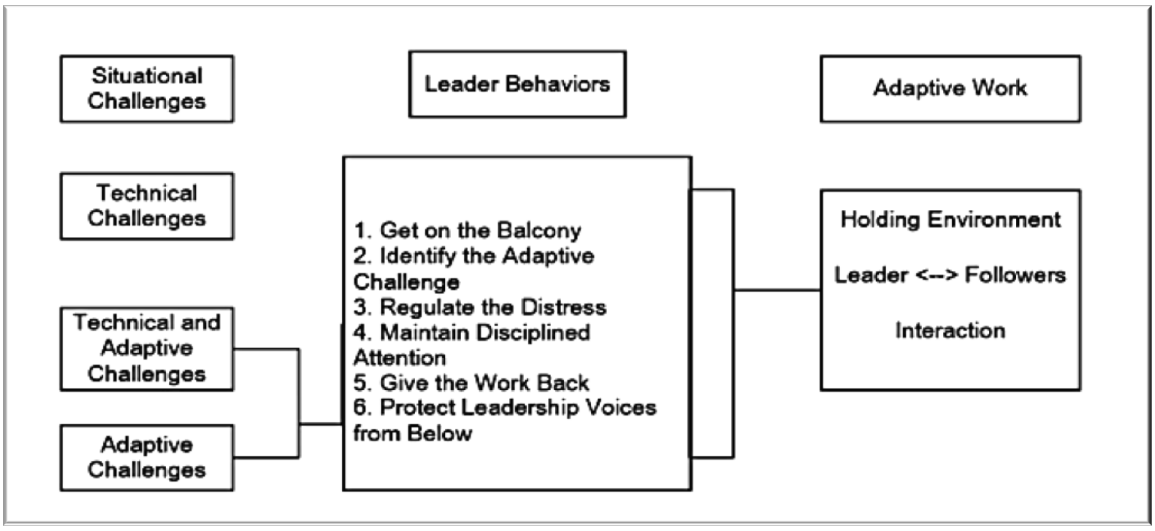


Figure 2.2. Northouse's model of adaptive leadership. From *Leadership: Theory and Practice* by P.G. Northouse, 2015, p. 261. Copyright 2015 by Sage Publishing. Reprinted with permission.

While Bernstein and Linsky (2016) outlined the shortcomings of adaptive leadership from a practitioner perspective, Northouse (2015) outlined some of the shortcomings from a theoretical perspective, specifically, (1) adaptive leadership is wide-ranging and abstract, (2) the major factors in adaptability and how they related to each other have not been clearly defined, (3) interpreting what the prescriptions mean in practical situations might be hard, and (4) a lack of empirical research exists. Northouse created an adaptive leadership questionnaire to measure adaptive leadership based on the following six steps: getting on the balcony, identifying the adaptive challenge, regulating the distress, maintaining disciplined attention, giving the work back to people, and protecting leadership voices from below. The 30-item instrument has not been validated. Northouse clarified that the instrument was not created for research purposes.

Pascale, Sternin, and Sternin (2010) suggested that it is possible to find solutions to adaptive problems by looking for positive deviants in the community. Their framework is based on the idea that at least one person in a community, using the same resources as the rest, has already solved the problem that confounds others. The positive deviance (PD) approach has been

used in dealing with female genital mutilation in Egypt and infant mortality in Asia, reducing hospital-acquired infections in the United States, and increasing pharmaceutical drug sales in Mexico. The problem solving process requires a facilitator who asks the community about the problem and leads them through an exploration phase. At the end of this phase, the facilitator asks the community if someone else they know has solved the problem. Often the community thinks that is not the case. Further investigation then reveals positive deviants. With help from the facilitator, the community goes through an exploration phase in which they try to identify the unique activities of the positive deviants. The whole community is then brought together to agree about experimenting with some of these activities. This is an iterative process. I note that in some cases the positive deviants were not aware of their own deviance or that they were doing anything different. This shows that unless people talk to each other about their problem solving, the solutions do not defuse to the rest of the community.

A common point between the PD approach and adaptive leadership is that they are not expert based. Neither approach offers answers; instead, they use questions. Another point of commonality is that both approaches bring the different stakeholders together in a holding environment. However, there are differences between the two approaches. The PD approach shows that capital "C" Conflict—conflict where people can feel emotionally triggered and feel threatened—might not be required to solve adaptive challenges. When the community is brought together, there are probably some conflicting points of view. However, this does not rise to the level of the conflict depicted in Heifetz's (Heifetz 1994; Heifetz et al., 2009b; Heifetz & Linsky, 2002) work. The PD approach was used when the community already acknowledged that a problem existed and wanted to solve it. They also had tried traditional approaches that did not work. Thus, the community was ready to try something new. The solutions offered by positive

deviants did not always violate their values but required behavior change. In this sense, it is possible that the positive deviance approach deals more with wicked problems (Rittel & Webber, 1973) than it does with adaptive challenges. This sheds light on when Heifetz's approach is most appropriate—a situation where there is disagreement about whether or not there is a problem to start with. This increases the chance of conflict. A final difference is that PD is more of a problem solving approach than it is a leadership framework. Nonetheless, it raises important questions for adaptive work: How important is leadership for dealing with adaptive challenges?

Dissertation Studies

Cojocar (2008) wanted to determine if adaptive leadership is a legitimate stand-alone theory or a theoretical derivative of theories such as transformational leadership, complexity leadership, situational leadership, and transactional leadership. He argued that adaptive leadership is a leadership framework, not a leadership theory. Cojocar interviewed experts from academia, professional training, and military on the research question. The interviewees included Ronald Heifetz, who was quoted, stating: "adaptive leadership is not a direct subset derivative of other leadership approaches such as situational and transformational leadership theories as defined by Bass and Burns, but encompasses tenets of both and other leadership theories" (p. 97). Nonetheless, most of the experts thought that adaptive leadership was a framework and not a complete leadership theory.

Klonsky (2010), building on Heifetz's work**,** postulated "that identifying undiscussables and initiating strategies to manage them required adaptive leaders who created an environment in which employees and leaders could wrestle with difficult issues" (p. ii). Based on interviews of leaders and their direct reports, she found that leaders used their wisdom-in-action. This is the ability to integrate affect, cognition, reflection, and intuition to adjust the distress level and

mediate conflicts. Furthermore, Klonsky found that leaders used their psychological courage—the ability to face reality, take risk, do good, and to discuss undiscussables. Additionally, she found that leaders created genuine relationships that fostered a climate of trust and acted as a holding environment to discuss undiscussables. Finally, Klonsky demonstrated that adaptive leaders built learning capacity by identifying the adaptive challenges, focusing attention, challenging expectations and assumptions, and framing issues.

Wool (2014) argued that adaptive leadership is different from trait approaches. He also suggested that while adaptive leadership and charismatic leadership (Weber, 1947) seem similar, they are, in fact, different. For instance, he suggested that adaptive leaders, similar to the socialized charismatic leaders, have a "responsibility to motivate followers to become self-actualized and participatory, spurring them to move beyond personal reward toward concern for the greater good of the group" (Wool, 2014, p. 89). Moreover, he proposed that through giving the work back (a phrase from Heifetz, 1994), adaptive leaders help the constituents become self-actualized and independent. Nonetheless, he failed to recognize that this has to be executed at a rate that is tolerable for constituents.

Minski (2014) examined the strategies that executive coaches employed to increase client self-efficacy. She found that coaches used the terms "adaptive change" and "adaptive leadership" interchangeably. Moreover, two of the coaches used the metaphor of getting on the balcony to help their clients "gain perspective through uncovering assumptions, changing frames of reference, and reflective thinking" (p. 70). The coaches credited Heifetz and Linsky (2002) as the originators of the "getting on the balcony" concept.

Several authors used adaptive leadership as a theoretical framework. Shor (2015) defined adaptive leadership as a "method for prompting people to address a problem successfully" (p. 8)

and attributed this definition to Heifetz et al. (2009b). However, adaptive leadership was not formulated for dealing with problems in general, but with adaptive challenges specifically. Shor considered using a professional development workshop intervention as consistent with adaptive leadership, yet he failed to show how the intervention resulted in movement on an adaptive challenge. Moreover, no change of values or assumptions took place. Wilkinson (2016) used the adaptive leadership framework in multiple case studies to explain the ability of small to medium enterprises (SMEs) to obtain credit. He argued that the study "confirmed that owners of successful SMEs are adaptive leaders" (p. 124) because their organizations transformed; for example, one of the participants in Wilkinson's research, explained the transformation as the use of automation and information technology to reduce labor and costs. While the change was large in magnitude, Wilkinson did not explain the occurrence of change in attitudes or values. Moreover, Heifetz's notion of transformation is, specifically, about adding new adaptive capacities to the organization (R. Heifetz, personal communication, November 4, 2016). Ebert (2015) compared and contrasted the lives and leadership styles of Josef Stalin and the Russian writer Mikhail Bulgakov during the early Soviet Union. She proposed that Bulgakov was an adaptive leader because through his writing he was able to expand his informal authority:

> He was able to connect to his purpose as a writer, articulate that purpose, understand his role, speak from the heart, and consequently expand his informal authority not in his own time but at a later time when his works would be published throughout the world. (Ebert, 2015, p. 90)

Ebert assigned adaptive leadership to Bulgakov largely because of his connection with his purpose. She argued:

> As a journalist, his satirical sketches of everyday Soviet life may be analogous to the role of the fool in Shakespeare's plays; like Bulgakov's satires, speaks the truth but the truth ensconced in humor. Rather than directly confronting the authoritarian regime, Bulgakov not-so-subtly depicted the results of the revolution and subsequent regime. (Ebert, 2015, pp. 89–90)

However, Heifetz (1994) was clear about the importance of modulating the provocation: “A leader without authority can spark debate, but he cannot orchestrate it. Without authority, a leader must regulate distress by modulating the provocation” (p. 207). Contrary to Ebert’s assertions regarding adaptive leadership, it seems that Bulgakov’s leadership was a failed case of adaptive leadership without authority. In other words, he failed to read the reactions of authority figures and accordingly modulate his provocation. As a result, his plays were banned for some time.

Demitor (2014) claimed that Laurie and Heifetz developed adaptive leadership; however, the initial developers for adaptive leadership were Heifetz and Riley Sinder (Eichholz, 2017). Furthermore, he claimed that in adaptive leadership, “the relationship between the leader and follower is one where the leader maximizes the followers’ well-being instead of their comfort” (Demitor, 2014, p. 42). Even though it is true that adaptive leadership does not value comfort and can create distress for followers, Heifetz and Laurie did not discuss the issue of well-being.

Almquist (2015) used the adaptive leadership framework to produce recommendations to improve implementation of time-compressed courses in community colleges. She suggested that administrators should treat the problem as an adaptive challenge and use the adaptive leadership framework’s five strategic principles (See Heifetz, 1994, pp. 122–123). However, Almquist misinterpreted some elements of adaptive leadership. She equated identifying faculty champions “who are willing to experiment with alternative course formats and provide venues for them to share their experiences and successes” (Almquist, 2015, p. 134), with protecting voices of leaders without authority. Similarly, she assumed that emphasizing the expected benefits of time-compressed courses contributes to keeping the distress within a tolerable zone when, in fact, communicating benefits is more likely to relieve distress.

Brock (2014) investigated the implementation of the Common Core State Standards (CCSS) in three public school districts. As part of her multi-case study, she analyzed interviews with middle school principals. Brock used two elements of adaptive leadership to explain her findings—giving the work back and regulating the distress. Still, she missed a key fact about giving the work back: it has to be commensurate with the ability of the followers to deal with it (Heifetz, 1994). Additionally, the discussion lacked any mention of using other key elements of adaptive leadership. Furthermore, Brock suggested that the adaptive change effort (CCSS implementation) is a second-order change because it involves change in behavior, values, or beliefs. Unfortunately, she did not specify the attribution for what she considers second-order change. Moreover, she suggested, incorrectly, that increasing the level of pressure and support amounts to ripening issues as defined by Heifetz (1994).

Presti (2014) documented how the director of allied health and chair of the nursing program at Northeastern Community College tackled the challenge of increasing English as a Second Language (ESL) nursing student achievement. She claimed the use of adaptive leadership in the change effort. Yet my closer examination showed only three elements were used: bringing stakeholders together, creating a holding environment, and giving the work back. Presti's discussion lacked any mention of regulating the distress, dealing with conflict, or identification of stakeholders' losses. Additionally, she did not discuss whether any change of values, mindsets, or assumptions took place.

Capa (2014) investigated the mechanism by which Collaborative Developmental Action Inquiry (CDAI) works to detect leadership challenges and develop leadership capacities. Using narrative analysis, images of artwork, and narrative excerpts, she identified three behavioral patterns: nonjudgmental attention, letting go, and acquiring equanimity, which support leaders'

capacities for: systems thinking, mindfulness, post-conventional stages of mental complexity, and authentic and adaptive leadership. In the case of adaptive leadership, the specific attentional abilities that help leaders identify adaptive challenges consist of being less reactive, having more capacity to listen and effectively communicate, and being better able to influence people through the process of change with less possibility of provoking a reactive response from them. In addition to these empirical findings, Capa further argued that because adaptive leadership involves creativity, high self-awareness, empathy with others, and tolerance of different ideas, it requires post-conventional stages of mental complexity (Cook-Greuter, 2013). Unfortunately, in her analysis, Capa conflated identifying adaptive challenges with adaptive leadership.

Brubaker (2015) borrowed the steps of observing, interpreting, and designing from adaptive leadership (Heifetz et al., 2009b) and applied them to the use of apology as an organizational intervention in crisis. He argued that "organizational leaders must carefully examine the situation, interpret meaning and impact, and design an intervention that meets the various needs of affected stakeholders" (Brubaker, 2015, p. 78). Brubaker suggested that adaptive leadership is relevant for apology because the situation is usually unclear and demands learning; however, he used the term "learning" in a technical sense and not in the adaptive sense. His apology model neglected other parts of adaptive leadership, such as creating a holding environment or keeping distress within a productive zone.

Bell (2015) interviewed Black women leaders in the Civil Rights Movement and tried to identify the kind of leadership they exhibited. She claimed that several leaders were adaptive leaders; however, she did not specify if they were adaptive leaders with or without authority. Moreover, Bell provided little evidence of adaptive leadership being present. She claimed that Maida Springer personified "creative deviance by entering the labor movement as a garment

worker without authority, gaining position power of an organizer, then emerging as the educational director for her local union" (p. 38). However, entering the labor movement without authority and gaining power does not constitute a strong form of creative deviance.

Johnson-Wells (2016) interviewed school principals to determine how they could close the achievement gap between White and minority students and answer the question: "How have principals used adaptive leadership to provide teachers with opportunities to learn about culturally responsive teaching?" (p. 65). In her explanation of the findings, she confused elements of adaptive culture with elements of adaptive leadership (Heifetz et al., 2009b). For example, she claimed that diversity is part of adaptive leadership practices, when it is a vehicle for how adaptation takes place. Moreover, she replaced the practice of distinguishing between adaptive and technical challenges with distinguishing between the balcony and the field. In her analysis of interviews, she equated observing and making decisions with adaptive leadership, even though adaptive leadership involves observing, testing interpretations, and making interventions, not just decisions. She tried to argue for some connection between the five practices of cultural competence (Lindsey, Roberts, & CampbellJones, 2013) and the practices of adaptive leadership, when the parallels were weak. For example, she equated valuing diversity with distinguishing between the balcony and the practice field.

In a similar attempt to force the concept of adaptive leadership to map to another framework, Moylan (2015) suggested, incorrectly, that Sinek's (2009) notion of "why" is equivalent to Heifetz et al.'s (2009b) diagnosis step in the adaptive leadership framework. However, the diagnosis step in adaptive leadership aims to identify the challenge and to determine whether it is adaptive, technical, or has elements of both. Moreover, Moylan claimed to confirm that high school faculty have "an initial negative cultural response to adaptive

leadership changes and that over time these negative cultural responses change" (p. 40). This finding resonates with Bernstein and Linsky's (2016) observation that adaptive leadership failed to engage people in a way that provides fun, a spirit of collaboration, and observable signs of progress. Nonetheless, a closer examination reveals that Moylan confused adaptive change with adaptive leadership.

Two researchers have mixed elements of transformational leadership with adaptive leadership: Lim-Williams (2014) investigated how nonprofit organizations (NPOs) in Singapore dealt with challenges. One of the research questions she tried to answer was: "How do Singapore NPO executives address leadership challenges defined by ambiguity and change?" (p. 9). In this question, she equated ambiguity and change with adaptive challenges. Lim-Williams found that executives dealt with the challenges by providing emotional support, dialogue and listening, opportunities to the staff, as well as time and space for development and being there. It is noteworthy that she lumped the dimension of inspiration from transformational leadership (Bass & Avolio, 1994) with the adaptive leadership practices of facilitating learning, problem solving, innovation, and adaptability. In another Asian study, Chan (2016) used the adaptive/technical challenge distinction as a theoretical framework for facilitating interculturality in local churches in Malaysia. Additionally, Chan posited that adaptive leadership is, "in essence, a type of transformational leadership that elevates followers to a higher moral level" (p. 123). However, Heifetz suggested that adaptive leadership is different from transformational leadership (R. Heifetz, personal communication, November 4, 2016). Moreover, Heifetz and his colleagues never discussed any elevation of followers to a higher moral order.

In one of two quantitative studies related to adaptive leadership, Conrad (2013) examined the ability of Denver school principals to build turn-around capacity; she measured adaptive

leadership using a proprietary scale developed by Cambridge Leadership Associates (CLA)—the leading adaptive leadership consulting firm. Limited information is available about the scale content and factorial validity; however, CLA indicated to the author that the scale has a Cronbach's alpha of .68, which is below the .7 value recommended by Nunnally (1978). When the scale was used with her sample population, Cronbach's alpha value increased to a very high .928 with the sample population; however, this kind of jump is extremely rare. Moreover, the results showed a relatively high prevalence of adaptive leadership among the principals, even though adaptive leadership is rare (Heifetz et al.,2009b; TEDxStCharles, 2011). She also developed a scale to measures technical leadership. Nonetheless, the scale had no direct link to Heifetz's definition; instead, technical leadership was defined as implementation of educational standards. Based on Heifetz et al.'s (2009b) prescriptions for creating an adaptive culture, the second quantitative study (Fowler, 2013) involved developing a scale to measure adaptive culture in student affairs departments of higher education institutions. The scale focused on adaptive culture and was not concerned with measuring individual adaptive leadership. Additionally, the scale identified a two-factor structure of team and boss instead of a five-factor structure with each factor representing one component of an adaptive culture as outlined by Heifetz and his colleagues. Nonetheless, the author did not provide an explanation for this discrepancy. Moreover, a few items in the scale could be understood as related to technical and not adaptive challenges. In a related vein, Schein (2010) argued that organizational culture cannot be measured with a scale. Culture for him is a set of deeply held assumptions that can take a long time to uncover. Each scale might only deal with a few facets of the culture that might not be relevant to the issue at hand. Fowler's (2013) scale does not deal with such deep assumptions. It is possible that Heifetz and his coauthors used the term "culture" in the

practitioner sense. A more scholarly treatment would have described this as climate, which is observable and easier to measure with a scale. In any case, if this is a description of climate, then what assumptions would a "real" adaptive culture have?

Discussion and Research Gaps

Despite robust expansion of the adaptive leadership framework (Bernstein & Linsky, 2016; Laurie, 2000; Williams, 2005, 2015), the rest of the scholarship on the topic suffers from a general confusion about the nature of adaptive leadership. The terms adaptive challenge, adaptive change, and adaptive leadership have been thrown around without paying attention to what Heifetz and his colleagues wrote. Sometimes, a problem was described as an adaptive challenge simply because it is a large problem. However, Heifetz, Kania, and Kramer (2004) argued, "it may seem as though large problems are adaptive and narrow problems are technical, but those criteria are not reliable" (p. 25). Often, scholars whose work is reviewed here, claimed adaptive leadership was present because the situation required learning; nonetheless, this was usually understood as technical learning. This confusion stemmed from the fact that the concept of learning has been coopted by the concept of schooling (Senge, 2008). Similarly, the leadership was described as adaptive only when one or two aspects of adaptive leadership were present. In other cases, the leadership was described as adaptive when in reality an adaptive challenge existed, or adaptive change was required. This confusion, in part, stemmed from the practitioner focus of adaptive leadership. Heifetz and his colleagues distributed bits and pieces about their definition of adaptive leadership and adaptive change throughout their texts. Unfortunately, scholars selected the piece that they remembered or the one that suited their thesis.

Heifetz and his colleagues did not state if adaptive leadership had a family resemblance (Wittgenstein, as cited in Podsakoff et al., 2016) or a necessary but sufficient construct structure

(Sartori, as cited in Podsakoff et al., 2016). Necessary but sufficient constructs have to meet all of the attributes listed for the construct in the form of attribute A and attribute B, all the way to the last attribute. Family resemblance constructs, on the other hand, share some elements with other members of the construct family but do not share all; for example, different kinds of games have a family resemblance structure (Wittgenstein, as cited in Podsakoff et al., 2016). While not all aspects of adaptive leadership have to be present to claim that someone is an adaptive leader, in my opinion, the presence of just one or two aspects of adaptive leadership is not sufficient to claim it was present. Otherwise, if the same logic was applied to transformational leadership, for example, then it would be acceptable to call anyone using intellectual stimulation (Bass, 1985) a transformational leader. Full use of the adaptive leadership framework is rare; the studies cited above demonstrate the use of only a few elements by the leader in question. Thus, it is more accurate to state that the leader in question uses some elements of adaptive leadership and not the full framework.

The overarching implicit assumption in the research has been that adaptive leadership exists and is conceptually distinct from related phenomena; however, this has not been demonstrated. Additionally, the research assumed that adaptive leadership is good. Thus, there was no need to ask about long-term negative effects. However, if, as Linsky claimed (TEDxStCharles, 2011), adaptive leadership is about distribution of losses, then asking about long-term negative effects is a valid concern.

Just under half of the dissertation scholarship I researched focused on the educational field. The rest was divided between business, not-for-profit organizations, the medical fields, and religious organizations. Additionally, with the exception of Conrad's (2013) and Fowler's (2013) work, all the other studies were qualitative in nature. The absence of quantitative empirical

studies is due to the lack of a widely available scale to measure adaptive leadership. The development of such a scale would allow comparison with other leadership styles and would enable a determination of its relation to other constructs such as organizational citizenship behavior, trust, psychological safety, and climate for innovation. In the next chapter, I outline the process needed to develop and validate such a scale.

Distinguishing Adaptive Leadership from Other Constructs

DeVellis (2017) recommended that before one embarks on developing a scale and creating statements, one should know if the construct to be measured is a distinct construct. Podsakoff et al. (2016) suggested, "the literature search is also helpful because it provides the researcher with critical information about those concepts from which the focal concept should be distinguished" (p. 170). In the following sections, I clarify the relationship between adaptive challenges and wicked problems (Rittel & Webber, 1973). Additionally, I discuss the relationship of adaptive change to second-order and third-order change (Bartunek & Moch, 1987; Levy, 1986). Finally, I describe the relationship of adaptive leadership to other "adaptive leadership" theories, transformational, and complexity leadership.

Adaptive challenges and wicked problems. The idea that some problems can be solved using existing methods while others cannot, is not entirely new and predates Heifetz's work by decades; in fact, Heifetz (2006) conceded that the adaptive/technical problem distinction was very similar to Selznick's (1957) distinction between routine and critical decisions. Moreover, almost 20 years before Heifetz published his first book, Rittel and Webber (1973) made the distinction between tame problems—problems that can be solved using existing knowledge, and wicked problems—problems that cannot be solved with existing knowledge. Wicked problems have the following characteristics:

1. Wicked problems have no complete formulation.
2. Wicked problems only have "good enough" solutions. There is no rule to tell when to stop.
3. Solutions are either good or bad, not true or false.
4. Solutions have unintended consequences.
5. Solutions are irreversible, and trial and error learning is not possible.
6. "There are no criteria which enable one to prove that all solutions to a wicked problem have been identified and considered" (Rittel & Webber, 1973, p. 164).
7. All wicked problems are unique.
8. There are many ways to explain a wicked problem. The solution of the problem will be based on the explanation used.
9. Failure at finding a solution is not tolerated.
10. Problems at one level are symptoms of a problem at a higher level.

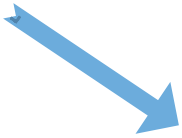
The concept of wicked problems has a marked resemblance to Heifetz's adaptive challenges. For example, both have no solution at the start, solutions have unintended consequences, the solution of the problem will depend on the explanation, and problems at one level are symptoms of other larger problems. Nevertheless, there are differences. Rittel and Webber (1973) articulated wicked problems in the context of planning. Heifetz's adaptive challenges is a more inclusive concept, not unique to planning and that can be used at the societal, organizational, and group levels. Heifetz's unique contribution is in recognizing that unlike planning problems, adaptive challenges take place within social systems. He theorized that finding a solution would result in real or psychological losses on the part of stakeholders, adding another level of complexity that Rittel and Webber did not recognize. In other words,

Heifetz recognized that the problem lies not so much in the solution "out there," but with stakeholders and their inner state. Unlike planning situations, where the solution cannot be undone, Heifetz and his colleagues recognized that in social systems, the only way to find a solution is to intervene—listen and look for effects—intervene again, until a "good enough" solution has been reached. Because adaptive leadership interventions are mostly social interventions, it is easier to undo them when compared to a large city planning problem. Stated differently, Heifetz and his colleagues recognized the relative malleability of social systems. Scholars focusing on wicked problems recently acknowledged this deficiency. Conklin, Basadur, and VanPatter (2007) argued that "you can read Rittel and Webber's 'Dilemmas' paper and imagine that there is such a thing as a problem with no people involved" (p. 4). They tried to remedy this deficiency by stating that social complexity is important for wicked problems: "In my thinking about wicked problems, I like to introduce the notion of 'social complexity' as inseparable from problem wickedness. There are no single stakeholder wicked problems" (p. 4). In a related vein, Head and Alford (2008) tried to link Heifetz's work with Rittel and Webber's by plotting a 3 x 3 matrix where one dimension measured problem complexity in terms of Heifetz's Type 1, Type2, and Type 3 challenges, and the second dimension measured diversity of stakeholders in terms of the number of parties and the degree to which they have conflict in values and interest.

As indicated in Table 2.3, from Head and Alford's (2008) discussion, wicked problems occur with Type 2 adaptive challenges involving multiple parties with conflicting interests, or with Type 3 adaptive challenges involving multiple parties each having a piece of the knowledge required to solve the problem. Moreover, Head and Alford (2008) considered Type 3 adaptive challenges with multiple parties—each with a conflicting interest—to be very wicked problems.

Table 2.3

Typology of Problem Types (Head & Alford, 2008)

Diversity → **Complexity ↓**	**Single party**	**Multiple parties, each having only some of the relevant knowledge**	**Multiple parties, conflicting in values/interests**
Both problem and solutions known (Heifetz Type 1)	Tame Problem		
Problem known, solution not known (relationship between cause and effect unclear) (Heifetz Type 2)			Wicked problem
Neither problem nor solution known (Heifetz Type 3)		Wicked problem	Very wicked problem

Note. The blue arrow indicates an increase in diversity and complexity. Adapted from "Wicked Problems: The Implications for Public Management," by B. Head and J. Alford, 2008, March 26–28, Draft Panel Paper to 12th Annual Conference, International Research Society for Public Management, p. 10. Adapted and used with permission of the authors.

This matrix failed to acknowledge the fact that adaptive leadership integrates social complexity with the concepts of adaptive challenges and adaptive leadership from the start. In any case, a better way of understanding the relationship between adaptive challenges and wicked problems is shown in Table 2.4, which was created for this dissertation.

Table 2.4

Adaptive Challenges and Wicked Problems in Relation to Complexity

Problem	**Low social complexity**	**High social complexity**
Low technical complexity	Tame problems/Type I challenges	Adaptive challenges
High technical complexity	Wicked problems	Adaptive challenges

Wicked problems in their original conception are complex problems that lack social complexity. They are consistent with what Ackoff (1979) described as *messes*: "Managers are not confronted with problems that are independent of each other, but with dynamic situations that consist of complex systems of changing problems that interact with each other" (p. 99). If we include social complexity in wicked problems as other scholars have done, then wicked problems start to resemble adaptive challenges. Nonetheless, one has to be careful to understand that the difference is not limited to the presence of social complexity in terms of differing values and interests, but the fact that stakeholders incur losses and will have to change actions, assumptions, or values. Moreover, they have to unlearn existing behaviors and values before they learn new ones.

Adaptive leadership, second-order, and third-order change. According to Bartunek and Moch (1987), second-order change involves a change in the schemata in the organization. Levy (1986), however, viewed second-order change as change that is large in magnitude. Based on this latter view, Waters, Marzano, and McNulty (2003) equated adaptive leadership with second-order change because in second-order change the magnitude of change is large. However as indicated earlier, the key distinguisher for adaptive challenges is not their magnitude (Heifetz, et al., 2004). Thus, adaptive change is not consistent with Levy's conceptualization of second-

order change. Adaptive change can include a change in schemata but is not limited to them. It can, additionally, include a change in values, assumptions, and habits. Thus, adaptive change includes second-order change (Bartunek & Moch, 1987) but can go beyond it; it is a more inclusive concept as indicated in Figure 2.3.

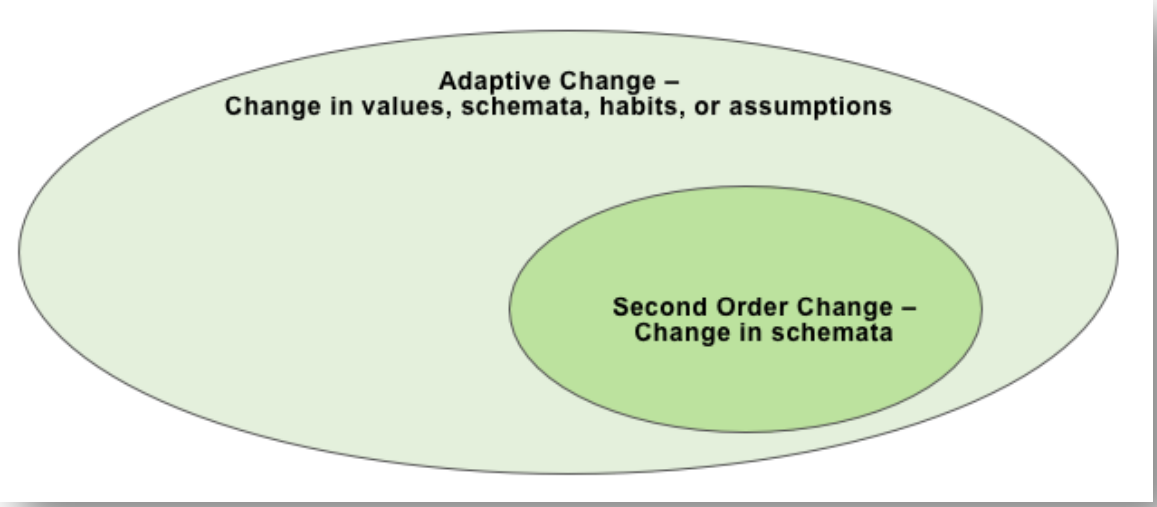


Figure 2.3. Adaptive leadership and second-order change. Created by the author as a syntheses if concepts in Heifetz (1994) and Bartunek and Moch (1987).

Third-order change gives organization members the chance to transcend schemata; it is concerned with "changes that lead them to become aware of benefits and limitations of their shared schema" (Bartunek & Moch, 1994. p. 24). Furthermore, it is change that transcends human cognitive capabilities and is similar to mystical experience. Consequently, adaptive change is not third-order change. Nonetheless, the authors suggested that a succession of hierarchically linked second-order changes might lead to third-order change. Accordingly, a succession of adaptive changes (change 1, change 2, all the way to change N) might lead to third-order change as indicated in Figure 2.4.

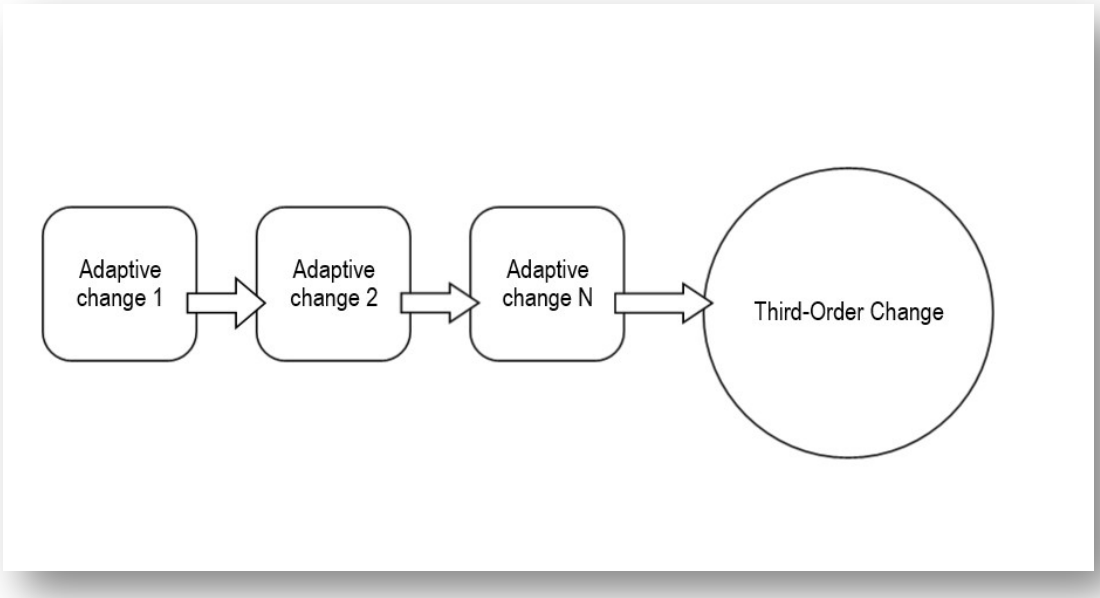


Figure 2.4. Adaptive change and third-order change. Created by the author based on adapative leadership and Bartunek and Moch (1987).

Adaptive leadership and other adaptive leadership theories. Yukl and Mahsud (2010) defined adaptive and flexible leadership as leadership that involves "changing behavior in appropriate ways as the situation changes" (p. 81). They looked at different conceptualizations of adaptive leadership and various research streams, including contingency theories, situational leadership, and research covering skills and traits that enable adaptive and flexible leadership. They argued that a flexible and adaptive leader should have a repertoire of different behaviors and that these behaviors should be appropriate to the situation. Yukl and Mahsud examined two different kinds of adaptive behavior: focusing on task, people, or both; and adapting to the situation in terms of skill characteristics, subordinate characteristics, and leader-subordinate relations. Additionally, they examined adapting behavior depending on organization type, position, subunit, national culture, and level of crisis. Moreover, they mentioned flexibility around pursuing multiple objectives that involve competing values. Finally, they examined the

research on adapting to emerging threats and opportunities. The authors recommended that a leader should:

- monitor changes in the external environment and identify opportunities and threats;
- identify pertinent actions, strategies, and decisions for responding to external changes;
- create an attractive vision of the benefits from change;
- find explanations for resistance to change and try to convert the opposition to change agents;
- recognize that change will not be easy, but at the same time build optimism for a new strategy;
- monitor progress and make adjustments;
- share information about progress and maintain commitment; and
- "use information about the outcomes of strategic decisions to refine mental models" (p. 87).

Overall, the recommendations provided by Yukl and Mahsud (2010) were high-level recommendations and tentative in nature; their identification of different kinds of adaptive behavior did not focus on the level of distress in a system, the followers' level of readiness for change, or whether a situation was adaptive/technical. However, they offered one insight that is consistent with Heifetz's work: "Being flexible and adaptive often includes finding innovative ways to deal with new problems and opportunities, but the types of decisions and actions needed for effective leadership may not be consistent with traditional role expectations in an organization" (Yukl & Mahsud, 2010, p. 84).

Glover, Friedman, and Jones (2002), using Piaget's (1971) concepts of assimilation and accommodation, argued that leading change without adaptation is insufficient. Instead, leading change requires traditional learning (assimilation) and undergoing an internal change in the structure of one's ideas, attitudes, and beliefs (accommodation). Leaders achieve the most adaptive leadership potential when they can combine high accommodation and high assimilation processes.

Glover, Rainwater et al. (2002) offered four principles for increasing adaptive potential: a holistic vision, cultural competency, knowledge management, and synergy created through diversity. Adaptation here is in response to external environmental changes. The concepts of assimilation and accommodation are similar to Heifetz's (1994) technical and adaptive learning. Nevertheless, Glover and his co-authors did not specifically define an adaptive leader. It is noteworthy here that their version of adaptive leadership used an element of transformational leadership (Bass, 1985)—creating a vision. However, their use is somewhat different in that the vision has to be holistic and sustainable. Another noteworthy element is the use of knowledge management, which is more in line with management as opposed to leadership (Zaleznik, 1977). Finally, the authors did not specify how they arrived at their framework.

With regard to the different conceptions of adaptive leadership, Table 2.5 compares Heifetz adaptive leadership with Glover's and Yukl's frameworks.

Table 2.5

Comparision of Adaptive Leadership Theories/Frameworks

Attribute	**Framework**		
Source	Heifetz (1994); Heifetz and Linsky (2002); Heifetz et al. (2009a, 2009b)	Glover, Rainwater et al. (2002)	Yukl and Mahsud (2010)
Definition	"Adaptive leadership is the practice of mobilizing people to tackle tough challenges and thrive" (Heifetz et al. 2009b, p. 14).	Not mentioned	"Flexible and adaptive leadership involves changing behavior in appropriate ways as the situation changes" (Yukl & Mahsud, 2010, p. 81).
Key elements	Identifying and diagnosing the adaptive challenge, identifying the system and the losses, intervening and orchestrating conflict, keeping focus on adaptive work, reflecting, and intervening again as needed	Cultural competency; knowledge management; synergy from diversity; holistic vision	Change of behavior
Leadership Focus	Leadership with and without authority	Leadership with authority	Leadership with authority
Focus	Leader-follower and contextual environment	Leader-follower and contextual environment	Leader-follower
Who is adapting	Leader to level of distress in the system, situation (adaptive vs. technical), followers' ability to take back the work. Followers are adapting to new values and ways of doing things.	The system is adapting through assimilation and accommodation	Leader
Systemic	Yes	Yes	No
Change oriented	Yes	Yes	No, only when adapting to threats and opportunities

Glover and his coauthors, along with Heifetz and his colleagues, offered complete frameworks and are concerned with change and adaptation. Moreover, they acknowledged the need for different kinds of learning. As outlined above, Yukl and Mahsud (2010) offered some recommendations for leading change in terms of adapting to different kinds of contexts, but they do not provide a complete framework for adaptation. They also appear more concerned with the leader-follower dyad. The different conceptualizations of adaptive leadership share a name but have only a few elements in common. Reed suggested that the concept of adaptive leadership is useful in thinking about leadership and in developing leaders. Unfortunately, the term has become part of the leadership vocabulary, although not exactly in the way the Heifetz used it (Cojocar, 2008).

Distinguishing adaptive leadership from transformational leadership. Transformational leadership has "the reputation of explaining particularly effective leadership" (Knippenberg & Sitkin, 2013, p. 2) and dominates a large portion of prestigious journals such as *The Leadership Quarterly* and the *Academy of Management Journal.* Burns (1978) marked the distinction between transformational and transactional leadership. Transactional leadership is based on a transaction between leader and follower in which the follower provides work in exchange for financial or psychological rewards. In other words, transactional leadership results in a quid pro quo relationship. In contrast, a transformational leader

> looks for potential motives in followers, seeks to satisfy higher needs, and engages the full person of the follower. The result of transforming leadership is a relationship of mutual stimulation and elevation that converts followers into leaders and may convert leaders into moral agents. (Burns, 1978, p. 4)

Additionally, a transformational leader not only comprehends the existing needs of followers but mobilizes "within them newer motivations and aspirations" (Burns, 1978, p. 254). Transformational leaders move their followers to transcend their "self-interests for the sake of

their group, organization, or country" (Bass, 1985, p. 15). The components of transformational leadership are (a) inspirational motivation: inspiring group members and increasing their motivation; (b) intellectual stimulation: thinking about ideas and concepts using novel approaches, questioning of one's assumptions, and re-framing of problems; (c) individualized consideration: providing supportive and considerate behaviors; and (d) idealized influence: having the capacity to act as a role model whereby the leader becomes respected, trusted, and admired (Bass, 1985).

Similarities and differences between adaptive and transformational leadership. Table 2.6 compares and contrasts transformation leadership with adaptive leadership on several dimensions.

Neither adaptive leadership nor transformational leadership is based on rewards; nonetheless, they differ in many respects. For example, adaptive leadership is conceptualized at the system, team, or organizational level. Transformational leadership, on the other hand, is primarily conceptualized at the dyad level: "The major interest is to explain a leader's direct influence over individual followers, not leader influence on group or organizational processes" (Yukl, 1999, p. 288). This explains why it is silent on intergroup conflict. Adaptive leadership, in contrast, advocates engaging in and generation of conflict over values.

Despite its origins in political leadership (Burns, 1978) and using many examples of transformational leaders without authority, the research on transformational leadership moved to a focus on authority figures; it assumed that a leader is the boss. This focus on the authority figure is not unique to transformational leadership, but it is a common problem in leadership research (Hunter et al., 2007). Similar to transformational leadership, adaptive leadership assumes that leadership can be exercised without position. Transformational leadership is based

on heroic assumptions; it places "an undue burden on the shoulders of a single leader" (B. Spector, 2013, p. 374). In a related vein, Yukl (1999) argued:

> Like most earlier leadership theories, transformational leadership theories reflect the implicit assumptions associated with the "heroic leadership" stereotype (Calder, 1977; Meindl, Ehrlich, & Dukerich, 1985). Effective performance by an individual, group, or organization is assumed to depend on leadership by an individual with the skills to find the right path and motivate others to take it. In most versions of transformational leadership theory, it is a basic postulate that an effective leader will influence followers to make self-sacrifices and exert exceptional effort. Influence is unidirectional, and it flows from the leader to the follower. (p. 292)

Nonetheless, not all aspects of transformational leadership are heroic. The critics focused on the heroic aspects of charisma and providing a vision, while they left out the less visible aspects of individualized consideration and intellectual stimulation.

Adaptive leadership does not have heroic expectations of the leader. Fletcher (2002) postulated that post-heroic leadership challenges:

> the goal of good leadership and the skills it requires. It is no longer assumed that leaders will have all the solutions and the charisma to get others to implement them. Instead, leaders are expected to create conditions under which collective learning and continuous improvement can occur. (2002, p. 1)

In adaptive leadership, the burden of identifying adaptive challenges is not limited to the authority figure; anyone in the organization can identify adaptive challenges. Moreover, adaptive leaders create the holding environment in which collective learning takes place. Finally, Heifetz and his colleagues (Heifetz, 1994; Heifetz & Linsky, 2002; Heifetz et al., 2009a, 2009b) suggested that leaders without authority should avoid becoming a lightning rod or become martyrs.

Table 2.6

Comparison of Adaptive and Transformational Leadership

Category	Adaptive Leadership	Transformational leadership
Based on exchange of rewards for work	No.	No.
Conceptualization	Beyond dyad (Heifetz, 2006); group and organizational level.	Dyad level (Yukl, 1999).
Authority is required for leadership	No.	No (however, focus of research is on authority).
Heroic in nature	No (Heifetz, 1994). Challenges heroic conceptions of leadership (Bushe, & Marshak, 2016).	Yes (Calas, 1993; McKelvey, 2008; B. Spector, 2013; Tourish, 2008; Yukl, 1999); focus on charismatic and visionary leadership.
Effect on leader	Might experience stress and frustration. In extreme cases can experience marginalization, termination, and physical violence.	Might be transformed to a higher level (Burns, 1978).
Effect on followers	Short-term to medium-term stress; feelings of inadequacy, anger, and frustration. Long-term increase of mental complexity, higher quality relationships. Creates independence.	Pride, respect, and trust; moving motivation from self-interest to collective interest; performance beyond expectations, innovation and change (Bass, 1985; Knippenberg & Sitkin, 2013); creates dependency (Eisenbeiß & Boerner, 2011; Kark, Shamir, & Chen, 2003).
Leader alternates between reflection and action	Yes.	Not explicitly.
Approach to conflict	Embracing/generating of conflict over values.	Not part of the conceptualization.
Interventions	Raise or reduce the heat. For example, asking questions. Used to create movement on adaptive challenges.	Intellectual stimulation, individualized consideration. Used to raise followers to a higher level.

Adaptive leadership assumes that leadership is dangerous and might have negative effects, both for the leader and followers. Leaders might be scapegoated or even character assassinated (Heifetz, 1994, p. 235; Heifetz & Linsky, 2002, pp. 192–193). For followers, high levels of distress and negative emotions during adaptive change are common. Heifetz and his colleagues suggested that unlike transformational leadership (Burns, 1978), "adaptive leadership is not about meeting or exceeding your authorizers' expectations; it is about challenging some of those expectations, finding a way to disappoint people without pushing them completely over the edge" (Heifetz et al., 2009b, p. 26). Transformational leadership assumes a more pleasant reality where the leader inspires followers to a higher level of motivation and performance (Bass, 1985). However, in Burns' (1978) original conceptualizing, the transformation was not limited to the followers; a leader could be transformed to a higher level. Even though transformational leadership uses examples of political leaders who were assassinated or marginalized, Burns (1978) and Bass (1985) did not focus on the negative consequences of leadership and are mainly concerned with the transformation. Finally, a further side effect of transformational leadership is creation of dependency on the leader (Eisenbeiß & Boerner, 2011; Kark et al., 2003). Adaptive leadership is not likely to create dependency because a leader does not provide the answers, gives the adaptive work back, and protects leaders without authority who identify adaptive challenges.

In adaptive leadership, leaders are depicted as interveners who alternate between action and reflection. Leaders develop a large range of interventions to keep the distress in the system within a tolerable range and to keep the focus on the adaptive challenge. For example, they can be less predictable to get attention or share their observations about work avoidance behavior. In transformational leadership, the interventions are in the form of individualized consideration and

intellectual stimulation. The purpose of the interventions is to raise the followers to a higher level. It is possible that intellectual stimulation can involve some level of reflection. Nonetheless, the leader's thought processes are absent from the conceptualization of transformational leadership. Research on transformational leadership focuses on leaders' actions but provides no clues about what leaders think or their way of being. Adaptive leadership, on the other hand, integrates thinking, being, and doing in the same framework. Before taking action, an adaptive leader thinks to answer the following questions: Is the challenge adaptive or technical? Who are the different factions? How are they linked? What is at stake here? Should I intervene? What would be a suitable intervention or question? How long should I wait after an intervention? Has the issue ripened? With regard to being, leaders are self-aware and use their emotions as data; to borrow language from the field of organization development, they use themselves as an instrument (Burke, 1994). They also have a quality of being and are not daunted easily; they distinguish between themselves and their role and do not take things personally (Heifetz, 1994; Heifetz & Linsky, 2002). Moreover, leaders are patient; they wait and listen to the effect of an intervention, and intervene again and again as needed; and they are patient with others who might try to attack or scapegoat them (Heifetz & Linsky, 2002).

Mental complexity requirements in adaptive and transformational leadership. Parks (2005) suggested that adaptive leadership requires a high level of mental complexity. She wrote:

> When Heifetz invites people to get on the balcony to observe larger patterns, he is calling for a major cognitive and affective achievement—the development of a fourth order of consciousness. He is encouraging the development of a critical, systemic, and holistic perspective. He is inviting people out of their own minds—to think about their thinking. (p. 52)

To further explore the difference between adaptive leadership and transformational leadership, I compare adaptive and transformational leadership in terms of the required mental

complexity. Kegan (1994) demonstrated empirically the existence of several stages (orders of mental complexity) of adult development over a lifetime, as indicated in Table 2.7. Some individuals remain in an early developmental stage, while others move from stage to stage. In each stage, one is able to acquire new mental capacities. Each subsequent stage includes the previous stage and transcends it. In addition to the increased skills, one's view of others, reality, and self shifts. There is an increased ability to see interdependence and differentiate one's self from others, while at the same time integrating one's self with the community. One is able to recognize one's mental models and sees them as distinct from oneself. It is worth noting that each of these stages has sub-stages and that moving from one full stage to the next can take years if not decades.

Table 2.7

Kegan and Lahey's Mental Complexity Stages

Attribute	**Socialized mind (third order)**	**Self-authoring mind (fourth order)**	**Self-transforming mind (fifth order)**
Degree of dependence	Dependent	Independent	Interdependent
Comfort with conflict	Poor	Moderate	High
Problem solving	Not indicated	Strong problem solving skills	Problem solving and problem finding
Prevalence in general population	Very common	Low	Very low

Note: Based on typology of Kegan and Lahey (2009).

In the socialized mind stage (Kegan & Lahey, 2009), individuals do not have opinions of their own and are easily swayed by others. They care about what others think of them; there is no separation between what others think of them and who they think they are. They avoid internal

conflict, think of issues in very concrete terms, and do not see shades of grey. In the self-authoring stage, individuals are independent. They have opinions and can solve problems. Moreover, they can manage internal conflict. Unlike individuals in the socialized mind stage, they can see that things are not purely black or white. Finally, in the self-transforming stage, individuals can see the social construction of reality. They see various patterns of interconnection in the world and view themselves as interdependent with others. They can find problems and possess the skills to solve them. They do not shy away from conflict and can reconcile paradox. They can see their own mental models. Thus, they are less subjected to them. In other words, their mental models do not have as much sway on them as in earlier stages. As discussed earlier in the section comparing transformational and adaptive leadership, there is no stipulation in transformational leadership about dealing with internal or external conflict. However, there is some evidence for strong problem solving skills. Additionally, the intellectual-stimulation aspect would suggest that leaders themselves must have some level of intellectual ability. The fact that leaders can create a vision and do not need guidance from others to create it points to their independence. Thus, a transformational leader is most likely in the self-authoring stage. In fact, this is the level of development that Kegan (1994) suggested regarding traditional views of leadership that require leaders to produce a vision, mission, or purpose without consulting with the different stakeholders:

> In somewhat different terms they are an echo of the fourth order expectation upon parents as leaders of the family to shape a value-generating vision or theory by which the family will be lead, and to induct their followers, the younger generation, into the vision. (p. 322)

The adaptive leader identifies the adaptive challenge, diagnoses the social system, is aware that each intervention is likely to have unintended consequences, separates his or her role from the self, initiates conflict and recognizes the values of others and self. This points to the

ability to find problems, understand mental models, and comfort with conflict. I conclude that adaptive leaders are either in the self-transforming stage or moving towards it. Therefore, they possess a higher level of mental complexity when compared with transformational leaders.

Kegan (1994) arrived at a similar conclusion regarding the development level required from the leadership advocated by Heifetz and Sinder (1990):

> [The leader] goes beyond the discovery we identified in our consideration of conflict that the form is neither prior to its relationship nor complete. Having created a disjunction herself and the fourth order structures (forms, system), having dislodged it from the place of subject in her epistemology, she has come to a place beyond merely disdaining or deconstructing the claim of any internally consistent theory or form to objective truth. She is doing something more than determining that any self-consistent theory is "ideological." (Kegan, 1994, p. 323)

One can see this lack of identification with personal ideology in the experimental approach advocated by adaptive leadership in both problem finding and problem solving.

Distinguishing adaptive leadership from complexity leadership. Complexity leadership introduces a new model of how undirected interactions can result in change in large, complex organizations and is concerned with organizational adaptation. Starting in the 1990s, leadership thinkers noted the failures of traditional management, which assumes that the world is controllable (Heifetz, 1994; Kotter, 2014; Wheatley, 1999) and predictable. Confirming their point, a variety of unpredictable situations have taken place that showed the limits of traditional hierarchical management. For example, few predicted the internet bubble in the late 1990s. More recently, few could imagine the United States' economic crash in 2008, which resulted in massive layoffs and created a recession that lasted for many years. Additionally, companies have increased in size and complexity. They now have to contend with social, dynamic, and, emerging complexity (Scharmer & Kaeufer, 2010). Social complexity means that there is significantly more diversity in the workplace; there are different stakeholders with different values and points of views. Dynamic complexity means that there is a delay between action and its effects.

Emerging complexity is the kind of complexity that follows disruptive change. To deal with these new challenges, complexity leadership borrowed metaphors and ideas from the complexity sciences: complex adaptive systems (CAS) theory, nonlinear dynamical systems theory, the synergetics school, and far-from-equilibrium dynamics (Goldstein, 1999). Complexity leadership scholars pointed out that the operating metaphor for the traditional management system was the machine, which assumes predictability and reliability (Wheatley, 1999). Because this metaphor no longer worked, as evidenced by the aforementioned failures, the scholars borrowed the living-systems metaphor from the biological sciences. This metaphor allowed for a more realistic depiction of how things work in complex organizations: flexible, unpredictable, and adapting to environmental changes.

Eoyang and Holladay (2013) postulated three kinds of change: static, dynamic, and dynamical. In static systems, the target of change might move from point A to point B. However, the target of change remains fundamentally unchanged. Point B is static. In dynamic change, the target of change, point B, is moving, but there is some predictability regarding where it will be. For example, when project management works, it would be a case of dynamic change. Complexity leadership is concerned with dynamical change: "When system conditions are unbounded, when the number of relevant variables is high, and when causation is not simply one direction, the nature of change changes" (Marion, 2008, p. 22). Complexity leadership assumes that adaptation starts from the action of the semi-autonomous agents at all levels of a CAS. It attempts to answer the following questions: "How can we loosen up the organization (foster innovation and adaptation) without letting it spin out of control?" (Uhl-Bien & Marion, 2008, p. 8). How to manage adaptive and unplanned innovation? How informal dynamics function? How can adaptive functions can be fostered in organizations (Uhl-Bien & Marion, 2009)?

In the following subsections, I will explain key complexity leadership concepts.

Complex Adaptive Systems (CAS). A CAS is made up of interacting, interdependent, semi-autonomous agents who create a systems-wide pattern (Quade & Holladay, 2010). A CAS is the basic unit of analysis in complexity science (Uhl-Bien et al., 2008). The appearance of structure, innovation, and renewal is attributable to constant interaction. Interaction is a constant and dominant characteristic of being social; it creates stability and change (Marion & Uhl-Bien, 2001). An example of a complex adaptive system is a healthcare system, which involves insurance companies, doctors, nurses, patients, patient family members, technicians, communities, pharmaceutical companies, and government. A CAS lacks a natural edge; it "may share members with other systems and extend beyond immediate view" (Eoyang, & Holladay, 2013, p. 15). Moreover, a CAS is naturally unpredictable but displays several forms of order and regulation (Alaa, 2009). Benbya and McKelvey (2006) identified eight characteristics of CAS: a large number of components, variation and diversity, unpredictability and nonlinearity, adaptation to the environment, interactions among agents, dependence on initial conditions, and self-organization.

Self-organization. Waldrop (1992) pointed out that living systems appear to "emerge from the bottom up, from the population of much simpler systems" (p. 278). Eoyang (1997) posited that "when a complex, interdependent system is pushed far enough from equilibrium, a strange amazing thing happens. Without an obvious plan and without the control of any single individual component, the system spontaneously reorganizes itself. This process is called self-organizing" (p. 127). A behavior is defined as self-organizing when "people (agents) are free to network with others and pursue objectives, even if this involves crossing organizational boundaries created by formal structure" (Coleman, 1999, p. 3). Waldrop suggested that the upward cascade of levels

upon levels in a system is another kind of self-organizing. Eoyang proposed that it is possible for a complex system to exist without self-organizing. Additionally, she points out that not all organizational structures are the result of self-organization.

Coleman suggested that a key enabler of self-organizing is autonomy in the form of the freedom to pursue entrepreneurial activities in an organization. A second enabler of self-organizing is the positive response of employees to empowerment and acting on it. A third enabler is the ability to cooperate across artificial boundaries, making cooperation a defining characteristic of success. Eoyang (1997) proposed that self-transforming feedback and differentiation are preconditions for self-organizing. Eoyang and Holladay (2013) postulated that creating a container (C), difference (D), and exchanges (E) can lead to self-organizing. The container holds "the parts of the system together close enough and long enough that they will interact to create a new pattern" (p. 26). The differences are not superficial differences but are differences that make a difference. The exchange is a transmission of energy, resource, or information. This exchange of different agents takes place inside the container, and each of these elements has the ability to affect the degree of self-organizing. Finally, Prigogine—as discussed in Chiles, Meyer, and Hench (2004)—proposed four mechanisms for self-organizing: unplanned fluctuations that start a new order, amplifying and reinforcing feedback loops, mechanisms for coordination, and "recombinations of existing resources that help construct the new order" (p. 500).

Emergence. One way to describe emergence is as patterns "coming into view" (Quade & Holladay, 2010, p. 60). This can happen slowly over time, or it can take place instantaneously. Another way to describe it is as:

> the arising of novel and coherent structures, patterns, and properties during the process of self-organizing in complex systems. . . . Emergent phenomena are conceptualized as

> occurring at the macro-level, in contrast to the micro-level components and process out of which they arise. (Goldstein, 1999, p. 49)

In other words, it is a system-level phenomenon. Emergence acts not as an explanation, but as a description pointing to the structures, properties, or patterns appearing at the system level (Goldstein, 1999, p. 58). Dickens (2012) suggested that it is neither bad nor good; "it simply is" (p. 50). Goldstein summed up the characteristics of emergent phenomena as follows: (1) dynamical over time, resulting in the creation of new attractors; (2) ostensive; (3) radical novelty at the macro-level that cannot be anticipated from the parts; (4) coherence of identity and correlation over time; and (5) macro level, not micro-level. Goldstein (1999) further added that the minimum requirements for emergence are nonlinearity, self-organization, far-from-equilibrium conditions, and attractors. The strategic shift at Intel from being a memory company to a microprocessor company, despite lack of planning from upper management (Hazy, 2008), can be understood as an example of emergence.

Attractors. An important concept in complexity science is attractors. Marion (2008) described the behavior of systems in relation to attractors as follows:

> Metaphorically, these changing, adapting systems move around landscapes; these landscapes have numerous pits, or choices, strewn across them, and the systems (or parts of systems) shift unexpectedly when they fall into one of these pits. These pits represent strategies/attractors, defined in physics as a realm of behavior to which motion gravitates. (p. 21)

Marion gave the example of following a fad as an example of an attractor. Coleman (1999) described market opportunities as attractors that pull agents towards them. However, if a fad can be an attractor, then not all attractors are opportunities or good in nature.

Role of the Leader in a CAS. Traditional leadership models are suitable for the industrial age. However, there is a need for new models that are suitable for the knowledge economy (Uhl-Bien et al., 2008). Complexity leadership provides such a model; it is not concerned with

the leader, it is concerned with leadership. It views leadership as an interactive dynamic among agents. The role of leadership is "to enable the conditions in which complex dynamics can emerge" (Marion, 2008, p. 15). The aim is to react rapidly and effectively to unexpected conditions.

Uhl-Bien et al., (2008) proposed a model of complexity leadership in which they referred to leadership as different functions. The model explained the interaction between the administrative function or the formal organization, on the one hand, and enabling and adaptive leadership, on the other. For the authors, enabling leadership "structures and enables conditions such that CAS are able to optimally address creative problem solving, adaptability and learning" (p. 201). Adaptive leadership here is "adaptive, creative, and learning actions that emerge from the interaction of CAS as they strive to adjust to tension" (p. 212). In other words, adaptive leadership as defined by the authors is adaptive action. In their model, administrative leadership is aligned with the managerial functions of planning, alignment, and control. The enabling leadership manages the entanglement between adaptive activity and the administrative function. It also creates the conditions for the adaptive activity to take place.

Discussing the adaptation to the need for microprocessors at Intel in 1970, Hazy (2008) described a model of complexity leadership that is similar to the previous model. His model used generative leadership instead of adaptive leadership to describe the emergence of collective direction in uncertain environments through the interaction of team members and not just designated formal leaders. He postulated that the nonlinear dynamics of exploration and exploitation (March, 1991) take place simultaneously and continuously at all levels of an organization (Hazy, 2008). Instead of functions, he described the leadership dynamics as mechanisms that increase interaction for different intents. Convergent leadership acts as a

catalyst for agent interaction "to improve system performance according to a purpose" (p. 364). Despite its similarity to administrative leadership (Uhl-Bien et al., 2008), it is different from it in that it is focused on purpose. No such purpose or convergence towards one is stated as part of administrative leadership. Generative leadership is focused on opportunities and challenges; it enhances interactions to create actions in response to opportunities and challenges in the environment. Finally, unifying leadership is coherence focused; it enhances agent interaction to create a collective identity, delimit boundaries, and allow the system to behave as a unity in the environment.

Regardless of the model used, what is clear is that administrative leadership and bottom-up problem solving/self-organizing are at odds with each other. Since both are part of organizations, they have to find a way to effectively exist together. For Uhl-Bien et al., (2008), this happens through management of the entanglement. For Hazy (2008), on the other hand, it is through unification. Complexity leadership aims to protect and enhance local adaptation and interaction in the hope that it would lead to emergence of new structures for organizational adaptation, while at the same time existing within a bureaucratic organizational structure. According to Lichtenstein et al. (2006), it "drives responsibility downward, sparking self-organization and innovation, and making the firm much more responsive and adaptive at the boundaries" (p. 8).

Comparing and Contrasting Complexity and Adaptive Leadership

Table 2.8 compares and contrasts adaptive and complexity leadership on several attributes. Adaptive leadership and complexity leadership diverge from traditional views of leadership centered on authority.

Table 2.8

Adaptive and Complexity Leadership Compared

Attribute	Adaptive leadership	Complex adaptive leadership
Leadership is defined as	Activity (Heifetz, 1994).	Position and "an emergent, interactive dynamic" (Uhl-Bien et al., 2008, p. 199) out of which collective change and action emerges.
Metaphors and language	Going to the balcony, being on the dance floor, pressure cooker, lowering the temperature, raising the heat, table, adapting, adaptive work, adaptation, medical doctor and cancer patient, improvisation, ripen, modern ballet, walking the razor's edge, creative deviance from the front line, holding steady (Heifetz, 1994); leader as artist, leader as musician (Parks, 2005); harp strings, listening to the song beneath the words, getting divorced with children (Heifetz & Linsky, 2002); vegetable stew, off-site retreat (Heifetz et al., 2009b).	Attractor, strange attractor, ball on a hilly landscape (Vallacher & Nowak, 2008), garbage can (Uhl-Bien et al., 2008, p. 217), storm cell (McKelvey, 2008, p. 258), herding cats (p. 266), self-organizing (Stevenson, 2012, p. 72), Baker's transform (Quade & Holladay, 2010), butterfly effect (Benbya & McKelvey, 2006), complexity theory (Wallis, 2009).
Where change starts	Leaders with authority, individuals without authority.	Interaction of autonomous (Marion, 2008, p. 27) or semi-autonomous (Quade & Holladay, 2010) interdependent agents in a CAS.
Behavior of system	Unpredictable. However, sudden creation of new structures is not indicated.	Unpredictable. Possibility of sudden creation of new structure.
Role of conflict	Generates conflict; sheds light on conflict or allows it to emerge (Heifetz, 1994).	Conflict and divergence as the initial step in change. "Emergent leadership might even create a disruption as a way of destabilizing the system and encouraging self-organizing" (Plowman & Duchon, 2008, p. 160).

Table 2.8 (continued)

Attribute	Adaptive leadership	Complex adaptive leadership
Interventions	Asking questions, taking action, making observations, and offering interpretations, (Heifetz & Linsky, 2002); using a word, gesture, action, or inaction (Parks, 2005); being less predictable to get attention, using silence, shining light on a difficult issue, quelling a diversion (Heifetz et al.2009b).	Using storytelling (Velsor, 2008), structural interventions to loosen control; using simple rules; creating rules that apply pressure to coordinate (Uhl-Bien et al., 2008); eliminating bureaucratic barriers (Plowman & Duchon, 2008).
Purpose of intervention	Disrupting/calming a group or situation, deflecting/focusing attention (Heifetz & Linsky, 2002), inspiring groups and individuals to move forward, ripening issues, increasing urgency.	Increasing number of nodes in a network, and altering connections (Plowman & Duchon, 2008); shifting to another attractor (Goldstein, 2008); increasing interaction among agents; increasing interdependence.
Adapting/Adaptation	Leader is adapting to level of distress in the system and to how much the followers can handle. Leader is adapting to whether he or she has authority or lack it. Followers are adapting by changing attitudes, habits, actions, relationship, and values. System adapts when behavior and values change.	Agents are adapting to each other (Waldrop, 1992), autonomous agents are adapting to local problems, CAS is adapting to the environment when new structures emerge.
Relation of change to equilibrium	Change happens outside equilibrium. However, there is a tolerable zone of distress. Relationship to distress curvilinear.	Emergence takes place far-from-equilibrium (Goldstein, 2008), change happens near or at chaos (Quade & Holladay, 2010).

Table 2.8 (continued)

Attribute	Adaptive leadership	Complex adaptive leadership
Assumptions about leadership ability to control	Both in control and not in control. In control of the holding environment (leadership with authority), one's own actions, and designing interventions to keep the conflict within a tolerable zone and make progress on adaptive issues. Also, in control of his/her personal life so that it does not become a distraction (Heifetz & Linsky, 2002); not in control of other's actions, but influences through interventions; not in control of the outcome of adaptive work (Heifetz et al., 2009b).	Not in control, use of influence instead (Uhl-Bien & Marion, 2009); control over structure, rules, interactions, interdependencies, tension, and culture (Goldstein, 2008); self-organization is the opposite of control (Kilduff, Crossland, & Tsai, 2008).

In complexity leadership, leadership is defined as a function (Uhl-Bien et al., 2008), or a mechanism (Hazy, 2008). It takes place through individual and group adaptive actions to local problems and conditions. Moreover, it is enabled through a function that allows for adaptive action to take place while at the same time managing the entanglement with the bureaucratic part of the organization. In adaptive leadership, leadership is defined as an activity, creating movement on adaptive challenges. It is not tied to position; anyone who focuses attention on adaptive issues can be considered a leader, even if that person lacks authority.

Adaptive leadership and complexity leadership share a common metaphor of adaptation; nevertheless, they disagree about how adaptation happens. For adaptive leadership, it happens by creating a focus on adaptive challenges, managing distractions, bringing stakeholders together in a holding environment, and orchestrating the conflict until the values and mental models change and the adaptive challenge is solved. For complexity leadership, on the other hand, adaptation is a product of interaction of large numbers of interdependent, semi-autonomous agents who

respond to pressure. In addition to the adaptation metaphor, both adaptive leadership and complexity leadership have a rich set of metaphors. Complexity leadership borrows metaphors from the biological and complexity sciences. Adaptive leadership borrows metaphors from the biological sciences, music, psychiatry, and from the personal backgrounds and practices of its authors. Overall, the metaphors in adaptive leadership are easier to learn as they correspond to the experience of the average person in the West. However, they could be criticized for being too American or Western and might need modification for a non-Western audience. For example, extremely poor people in parts of Africa, Asia, or South America might not be familiar with pressure cookers and might not understand that a pressure cooker might explode if one does not release some of the pressure in it while cooking. Another example is the "divorced with children" metaphor, which Heifetz and Linsky (2002) used to describe the loss and difficulty of having to choose between two values that are important to the way one understands one's self (what is good for the children and what is good for one's self). Divorce, while common in the United States, might be rare in other parts of the world. Moreover, the legal mechanism for dealing with children during a divorce, and the specific choices to be made, vary from country to country.

Both adaptive leadership and complexity leadership assume that equilibrium conditions prevent change. Thus, both recommend that a system be taken out of equilibrium. In the case of adaptive leadership, there is an optimal zone for achieving this; if there is too much distress in a system, change stops and the leader with authority might be fired or character assassinated. In complexity leadership, change happens far-from-equilibrium. Some authors even claimed that it happens near chaos conditions (Quade & Holladay, 2010).

Both adaptive leadership and complexity leadership abandon the assumptions of control and predictability. In complexity leadership, when a system is at the edge of chaos, sudden appearance of structure and the move to an alternative attractor are possible. Complexity leadership assumes no control over the individual interactions of the agents. However, it assumes some control over the enabling conditions. Adaptive leadership does not assume the same level of unpredictability as complexity leadership; it does not expect a sudden appearance of structure or sudden resolution of an adaptive challenge. Furthermore, adaptive leadership assumes that a leader with authority cannot control individuals, groups, or the outcome of adaptive work. However, they can control themselves and their interventions.

Due to the different assumptions and different purpose for leadership, the nature of interventions is also different. In complexity leadership, the goal is to increase interactions among interdependent, semi-autonomous agents and move a system closer to the edge of chaos. Interventions include eliminating bureaucratic barriers and creating rules to apply pressure to coordinate with other agents. In adaptive leadership, the goal is to keep attention on an adaptive challenge. Interventions include making observations, asking questions, silence, and quelling a diversion.

Conflict plays a central part in adaptive leadership; different stakeholders come together to resolve it and to deal with the subsequent losses. Similarly, in complexity leadership, "emergent leadership might even create a disruption as a way of destabilizing the system and encouraging self-organizing" (Plowman & Duchon, 2008, p. 160). However, a disruption is not necessarily a conflict. Adaptive leadership conflicts are not merely conflicts of opinions, ideas, or interpersonal conflict; they are conflicts over deeply held beliefs and values. The conflicts in complexity leadership are conflicts over ideas but might not necessarily include values.

Uhl-Bien et al. (2008) postulated that complexity leadership is suited for dealing with adaptive challenges:

> Complexity leadership occurs in the face of adaptive challenges (typical of the Knowledge Era) rather than technical problems (more characteristic of the Industrial Age). As defined by Heifetz (1994; Heifetz & Laurie, 2001 [sic]), adaptive challenges are problems that require new learning, innovation, and new patterns of behavior. (p. 202)

Nonetheless, if overcoming adaptive challenges requires orchestrating conflict over values, distributing the losses, and overcoming the tendency to avoid adaptive work, then it is not clear how increasing interactions of interdependent, semi-autonomous individuals alone is sufficient to deal with adaptive challenges. First, complexity leadership does not specify how conflicts over values are resolved or if they are addressed at all. It assumes that the increase in quantity of interaction will allow people to work out conflicts. Second, complexity leadership does not deal with the distribution of losses. Third, complexity leadership assumes that people want to solve the problems; it does not account for a subconscious competing commitment to reduce distress from potential losses and avoid adaptive work. In other words, the tendency for adaptive work avoidance can serve as a "negative" attractor state.

With regard to the definition of adaptive challenges used by the authors, it seems that authors understand the term "learning" in purely technical terms and not as adaptive learning. For example, they suggested that complex adaptive systems "are capable of solving problems creatively and are able to learn and adapt quickly" (Uhl-Bien et al., 2008, p. 201). However, adaptive learning is slow, because values and mental models do not change quickly, especially if new mental models require an increase in mental complexity (Kegan & Lahey, 2009). Understanding learning in purely technical terms is not unique to the authors but is present in the broad scholarship on complexity leadership. According to Kilduff et al. (2008), organizations are "transformational engines that generate opportunities for members to learn from each other and

from organizational resources such as data bases [*sic]*, procedures, and goals" (p. 99). The fact that "learning from each other" is placed at the same level as learning from procedures is indicative that this is technical and not adaptive learning. Ashmos, Duchon, and McDaniel (2000) provided another example. They argued that "connections, especially rich connections, transmit information and enable meaning creation among subunits, thus providing systems with improved capacity to learn" (p. 579). It is technical learning that takes place through transmission of information. As in the case of the positive deviance approach, it is possible that complexity leadership scholars are using the term, adaptive challenges, when in fact they intend to describe wicked problems.

Chapter Conclusion

I have explicated adaptive leadership in the previous sections and covered adaptive leadership with and without authority. Based on the discussion in this chapter, I have pointed to a confusion in dissertation research around the difference between adaptive change, adaptive leadership, and adaptive challenges. This confusion reflects a lack of precision in the use of language. More importantly, I have determined that the main gap in the research is the absence of a widely available scale to measure adaptive leadership. The existence of this gap has contributed to the lack of quantitative research.

Singh (1991) suggested that redundancy between two or more constructs be assessed from conceptual and empirical perspectives. From the outgoing discussion, it appears that adaptive leadership is conceptually distinct from transformational leadership, complexity leadership, and other adaptive leadership theories/frameworks (Glover, Friedman et al., 2002; Yukl & Mahsud, 2010). Thus, there appears to be no proliferation of constructs (Shaffer et al., 2015) and one can proceed in the process of scale development.

In Chapter III, I discuss the process for developing and validating a scale to measure adaptive leadership with authority. There are four reasons for my focus on leadership with authority. First, one cannot abolish authority; "people always need to glance, at least on occasion, toward some central figure" (Heifetz, 1994, p. 63). Second, most medium and large organizations have some level of authority structure and hierarchy. Third, it is exceedingly difficult for leadership without authority to be effective if the authority figure decides to oppose it entirely. Fourth, most of what today is called *leadership development* is actually *leader* development and not leadership development; the leader with authority is still central in the development process. Thus, the most logical starting point for adaptive leadership development is the authority figure.

Chapter III: Methodology

Nardi (2014) defined a scale as "a set of items that are ordered in some sequence and that have been designed to measure a unidimensional or a multidimensional concept" (p. 60). In a scale, responses to multiple items are combined into a composite score presumed to be caused by a common latent construct" (Abell, Springer, & Katama, 2009, p. 10). One cannot directly observe a phenomenon or a construct (variable); using scales one can indirectly "capture" a latent phenomenon.

Steps for Scale Development

Hinkin (1998) and P. Spector (1992) pointed to two approaches for scale development: deductive and inductive. In deductive scale development, the theory base is rich and provides a sufficient amount of information to generate items. Hinkin (1998) stated: "This approach requires an understanding of the phenomenon to be investigated and a thorough review of the literature to develop the theoretical definition of the construct under examination" (p. 106). He suggested that this approach can be very time consuming. In the inductive approach, theory either does not exist or does not lead to easy generation of items. Researchers create "scales inductively by asking a sample of respondents to provide descriptions of their feelings about their organizations or to describe some aspects of behavior" (p. 107). The inductive approach demands knowledge in content analysis.

Different scholars have identified the steps involved in scale development. Hinkin (1998) listed the following steps: (a) item generation; (b) questionnaire administration; (c) initial item reduction; (d) confirmatory factor analysis; (e) convergent/discriminate validity; and (f) replication. P. Spector (1992) detailed these steps: (a) clearly and precisely define construct of interest; (b) generate items and design scale, including deciding on format, response choices, and

instructions; (c) pilot test; (d) administer and item analyze, including initial establishment of reliability; and (e) validate and norm the scale. Abell et al. (2009) outlined these steps: (a) determine what to measure, how, and for whom; (b) design a validation study; (c) examine evidence of reliability; (d) examine evidence of validity; and (e) examine factor structure. Finally, DeVellis (2017) identified the following steps: (a) determine what is to be measured; (b) generate an item pool; (c) determine the format for measurement; (d) submit the initial item pool for expert review; (e) have the initial item pool reviewed by experts; (f) consider inclusion of validation items; (g) administer items to a development sample; (h) evaluate the items; and (i) optimize scale length. While the labels and number of steps might differ depending on the author(s), there is a great amount of overlap between the approaches. Generally, the main steps are to identify and define the construct to be measured, operationalize it, generate a pool of items based on literature review, design the survey, conduct expert validation, pilot the survey, administer the survey to a large sample, and conduct factorial validation.

Defining and Operationalizing the Construct

According to P. Spector (1992), defining the construct is possibly the most difficult part of scale construction, especially with abstract and complex constructs. I have found this to be the case with the adaptive leadership with authority construct. Lack of definitional clarity makes it harder to generate items. Thus, I tried to clearly define the construct so that it was easier to write items for measurement. Heifetz et al. (2009b) defined adaptive leadership as "the practice of mobilizing people to tackle tough challenges and thrive" (p. 14). However, I define adaptive leadership as leadership that helps groups, departments, and organizations face difficult problems—problems that require a change in habits, values, or assumptions. Such a change often necessitates prolonged learning and experimentation. Because these problems are tough and

might force people to change their values/habits/assumptions, trying to deal with them can sometimes result in resistance and conflict. Second, I define adaptive leadership with authority as adaptive leadership as exercised from a position of power. Heifetz and his colleagues borrowed the concept of thriving from evolutionary biology, in which a successful adaptation has three characteristics: It preserves the DNA essential for the species' continued survival; it discards (reregulates or rearranges) the DNA that no longer serves the species' current needs; and, it creates DNA arrangements that give the species' the ability to flourish in new ways and in more challenging environments. Successful adaptations enable a living system (Heifetz et al., 2009b, p. 14).

Operationalizing the construct. Adaptive leadership is a wide-ranging concept (Northouse, 2015). Surveying the literature was helpful in determining whether previous definitions encompass the true essence of the concept or fail to do so because they either omit one or more of its key attributes or "include attributes that they should not" (Podsakoff et al., 2016, p. 170). Heifetz and his colleagues have defined the elements for adaptive leadership differently over time; for example, Heifetz (1994) used five elements whereas in the most recent book he and his colleagues (Heifetz et al., 2009b) have expanded the framework to include 12 elements. It is not easy to identify the attributes that capture the essence of a concept, and developing good conceptual definitions entails a considerable amount of cognitive effort and meticulous thinking on the part of the researcher (Podsakoff et al., 2016). My initial assessment was that the most recent version (Heifetz et al., 2009b) includes attributes that go beyond the essence of adaptive leadership. Fortunately, I had a chance to talk to Dr. Heifetz and I asked him if he felt that his first two books (Heifetz, 1994; Heifetz & Linsky, 2002) captured the essence of adaptive leadership. He agreed that to some degree they did, but he also added that he felt it was

important to add the concept of Use of Self in the conceptualization (R. Heifetz, personal communication, November 4, 2016) as was done in the most recent book (Heifetz et al., 2009b). The Use of Self was also partially covered in Heifetz and Linsky (2002) and was further expanded in Heifetz et al. (2009b). Based on this conversation, I reviewed the first two books, determined what I thought the essence of adaptive leadership was, and then added the Use of Self as an additional element. A few of the labels that I used in my operationalization differ slightly from Heifetz's (1994), Heifetz and Linsky's (2002), and Heifetz et al.'s (2009b) conceptualization in their labels. Table 3.1 also includes Northouse's (2015) and Conrad's (2013) operationalizations for comparison. Besides the labels, as shown in Table 3.1, the main difference in my operationalization is dividing Orchestrating the Conflict into two parts: Create the Holding Environment and Regulate the Distress.

Table 3.1

Comparison of Conceptualizations of Adaptive Leadership Components

This dissertation (Raei, 2018)	**Heifetz (1994)**	**Heifetz and Linsky (2002)**	**Northouse (2015)**	**Conrad (2013)**
Distinguish Between Adaptive and Technical Challenges.	Identify the adaptive challenge.	Get on the balcony.	Get on the balcony. Identify the adaptive challenge.	Distinguish technical from adaptive challenges. Think systemically. Act politically.
Identify the Stakeholders and their Losses.		Think politically		Think politically.
Create the Holding Environment and Invite the Stakeholders.	Focus attention on ripening issues and not on stress reducing distractions.	Orchestrate the conflict.	Maintain disciple attention.	Orchestrate conflict.
Regulate the Distress.	Keep the distress level within a tolerable range.		Regulate the distress.	
Give the Work Back (to people but at a rate they can handle)		Give the work back.	Give the work back.	
Protect Voices of Leadership without Authority.	Protect voices of leadership without authority.		Protect voices of leadership from below.	
Use of Self.		Hold steady. Body and soul.		Stay in the game—stay alive. Know your purpose. Know your defaults. Know your role in the system. Own your piece of the mess. Use interpretations experimentally. Have willingness to exceed one's authority.

Item Pool Development

Scholars have identified criteria for high-quality survey statements: simple and short (Hinkin, 1998), clear (DeVellis, 2017), avoid jargon (Nardi, 2014; P. Spector, 1992), avoid multiple negatives (DeVellis, 2017), contain a single idea (P. Spector, 1992), have an appropriate reading level for the target population (DeVellis, 2017), avoid double-barreled statements (DeVellis, 2017; Hinkin, 1998; Nardi, 2014), and not be leading in nature (Hinkin, 1998; Nardi, 2014). Double-barreled statements are those that pertain to two different issues instead of one. The problem with double-barreled statements is that when a person answers in the affirmative (or negative), she or he could be answering in reference to one part of the statement and not both. A better solution is to create two separate statements instead of just one. The reading level required to take the scale should be consistent with the reading ability of the target population; DeVellis (2017) recommended a reading level of between 5th and 7th grade for the general population. However, because of the complex nature of adaptive leadership, I could not capture it using simpler terms, and opted for a 12th grade reading level.

When generating statements for the potential scale, it is recommended to start with a large number of items (DeVellis, 2017). The reason is twofold. First, one will realize that some of the statements are redundant. Second, a large number of statements will be eliminated in the subsequent validation stages. For example, the expert panel that reviews the statements for content validity might find that certain statements relate only weakly to the construct; thus, they will be eliminated. Additionally, a few statements might be excluded during the pilot because they might not be relevant to the target population. A large number of questions will be eliminated during exploratory and confirmatory factor analysis, and reliability estimation due to poor loading on factors (components), high loading on multiple factors, loading onto a factor that

has fewer than three statements, or because reliability increases after eliminating the items. In fact, it is not uncommon for a scale to start with 100 statements and end with 30 statements or less after the various stages of validation.

For each of the elements of adaptive leadership, I generated at least 10 items. I expected the adaptive leadership element of Distinguish Between Adaptive and Technical Challenges to have the largest number of missing items; in many organizations, people feel pressure to deal with problems quickly, and to take action. Thus, they reduce the time spent in diagnosing the challenges, collecting data, and exploring the various interpretations of the situation and alternative interventions (Heifetz et al., 2009b). I went to great lengths in "exploring the nuanced meaning of constructs through experimentation with phrasing suitable for the intended respondents, without straying too far outside the definitional boundaries of the domain" (Abell et al., 2009, p. 43). The items were, mostly, based on many passages in the material covered in the literature review; however, some popular fiction and popular media served as a source for inspiration as well. Finally, a few items were the result of practitioner feedback based on interviews that I conducted as part of my individualized learning agreement.

Redundancy in items is not bad in and of itself; however, it is important to know the kind of redundancy. DeVellis, (2017) made a distinction between relevant and irrelevant redundancies. Irrelevant redundancies change grammatical structure or words. An example of an irrelevant redundancy would be "my boss acts as if he is the most clever person" and "my boss behaves as if he is the smartest person." A relevant redundancy would try to get at the same part of the construct from two slightly or markedly different angles. For example, "my boss is logged-in to the work system most of the night" and "my boss skips meals to get the work done" would represent two angles of being busy or overworked.

Finally, I included several reverse scored items. The reason for including reverse scored items in the survey is to ensure a closer reading of items and to make it possible to see if respondents focused on the actual item and did not merely select the same pattern of responses for all items.

Validity

The task of the researcher is to provide evidence for scale validity at multiple levels. Abell et al. (2009) identified the following kinds of validity: face, content, factorial, construct, and criterion. Face validity decides "whether a scale looks like it measures what it is intended to" (Abell et al., 2009, p. 102) to the average person, without requiring a deep knowledge related to what is being measured. Content validity is established with expert input and is concerned with whether the items have sampling adequacy or the degree to which "a specific set of items reflects a content domain" (DeVellis, 2017, p. 84). There are two kinds of construct validity: convergent and discriminant (Abell et al., 2009). Convergent validity means that the scale produces results sufficiently similar to other scales that attempt to measure the same, or a very similar, construct. Discriminant validity shows that the scale differs sufficiently from other scales so that it measures a different construct, for example adaptive leadership versus transformational leadership as measured by the Multifactor Leadership Questionnaire (MLQ). If the scale is discriminant, then results of the adaptive leadership scale would show low correlations with the results from the MLQ. One kind of criterion validity is concurrent validity (Nardi, 2014). One can establish concurrent validity when the newly developed measure matches other existing criterion. For example, a new scale to measure transformational leadership would have high agreement with the MLQ. Another kind of criterion validity evaluates how accurately the scale predicts "some future, rather than current outcome" (Nardi, 2014, p. 63).

Face validity and content validity. The use of face validity is problematic because proposed scale items can appear to measure a construct when in reality they fail to do so (DeVellis, 2017). Moreover, face validity does not follow a predefined and rigorous procedure similar to what is used in content validation. Construct and criterion validity can only be established after content and factorial validity have been established. Thus, in this dissertation I conducted content and factorial validation of the scale.

There are several ways of assessing content validity, and all involve the use of an expert panel. DeVellis (2017) suggested asking the expert panel to rate the relevance of proposed items to the construct as low, moderate, or high. Abell et al. (2009) outlined a process whereby the expert panel rates each statement for its relevance to the construct with not at all, a little bit, somewhat, quite a bit, and very well as the rating option in the example. They suggest that six to 10 panelists are sufficient for content validation.

Content validity differs from other types of validity because it is defined by the actions the scale developer takes at the start of scale development (DeVellis, 2017). Content validity evidence relies on two components: "the care with which items were originally constructed and the expertise and suitability of those selected as judges" (Abell et al., 2009, p. 103).

Expert panel. Before sending the scale for content validation, I received feedback on the clarity of the items and organization of the survey items from a group of colleagues and two of the dissertation committee members. I then sent the scale items to a panel of four experts (Appendix A) for content validation. The instructions (Appendix B) explained how I defined adaptive leadership with authority and operationalized it as Distinguish Between Adaptive and Technical Challenges, Identify the Stakeholders and their Losses, Create the Holding Environment, Regulate the Distress, Give the Work Back to people at a rate they can handle,

Protect Voices of Leadership without Authority, and Use of Self. A definition was provided for each of the sub-constructs. I instructed the panel to rate each statement as either weakly, moderately, or highly related to its assigned sub-construct. Moreover, the instructions asked the panel to look for jargon and words requiring high educational attainment (Appendix B). Given the small number of experts, I found this to be better than the division suggested by Abell et al. (2009) who used "not at all," "a little bit," "somewhat," "quite a bit," and "very well" as the rating options in the example. In my instructions, "not at all" and "a little bit" are summed up under weakly related. As a result of the feedback from the expert panel, I modified the item "*My boss thinks that technology can solve most of our problems*" to "*My boss thinks that using technology to put policies and procedures in place will solve our problem*." Additionally, I removed the item "*My boss focuses on the wrong problem*" due to being poorly related to the construct.

Scale development. Following the feedback from the experts, I designed the scale. This involved making decisions about the exact format of the scale, selecting response choices, and creating instructions (P. Spector, 1992). Likert scales allow the capture of more detail in magnitude and frequency and can improve scale reliability (Abell et al., 2009). I decided to use a six-point Likert scale because it is common practice (DeVellis, 2017). In addition, I feared that "if too many people pick the middle choice, their data will be less revealing" (Abell et al., 2009, p. 50). I made the instructions as simple as possible. Nardi (2014) suggested that online surveys should intermittently give some visual indication about how much of the survey the respondent has completed already, and how much is left until completion. This suggestion was incorporated as part of the design in SurveyMonkey.

Pilot-Testing the Survey

Researchers may use small-sample pilot data collection to detect problems and make adjustments before a full-scale study (Abell et al., 2009). Bradburn, Sudman, and Wansink (2004) recommended pre-testing a survey with 10 to 12 colleagues or individuals from the target population. I sent a recruitment posting on social media for the pilot (Appendix C). Similarly, I sent a short e-mail to a selected group of friends (Appendix D). I also created a job posting on Amazon's Mechanical Turk to recruit a small number of respondents. The total number of respondents for the pilot was 34. The version of the survey used in the pilot (Appendix E) provided an open-ended question at the end asking for suggestions for improvement. However, the respondents did not provide any suggestions for improvement. Still, the pilot was invaluable in that I identified a missing age group in the demographics section and added government to the list of industries. Moreover, it allowed me to correct the fact that the reverse-scored items were identified as such in the pilot. Finally, I further randomized the statements in the final version to have an equal number of reverse scored items on each screen page.

Recruitment, Selection, and Logistics Planning with Participants

It is noteworthy that there is a lack of agreement among scholars about the minimum sample size for confirmatory and exploratory factor analysis. DeVellis (2017) pointed out that it is not unusual to find scales developed with a small sample of 150 respondents. Still, he suggested that for a 90-item factor analysis, a sample of 400 respondents might an acceptable size. Based on a content analysis of scale development articles from 1995 to 2004, Worthington and Whittaker (2006) found that the participant to item ratio varied between 2:1 to 35:1 for exploratory factor analysis. They considered a sample size of 150 to 200 to be adequate when the communalities exceed 0.5. Moreover, they did not recommend conducting confirmatory factor

analysis with less than 100 respondents. Clark and Watson (1995) recommended a minimum sample size of 300. My scale has 78 items; based on an item to participant ratio of at least 5:1, my target sample size was 450 respondents. This number exceeded the sample sizes recommended by DeVellis (2017) and Worthington and Whittaker (2006).

I recruited the participants from two different pools, both based on convenience sampling. The first pool had 500 paid respondents from Amazon's Mechanical Turk, "an online labor market where requesters post jobs and workers choose which jobs to do for pay" (Mason & Suri, 2012). It provides three distinct benefits: low cost, subject pool diversity, and subject pool access (2011). Landers and Behrend (2015) argued that the distinction between Mechanical Turk and other convenience samples is arbitrary. Moreover, they posit that organizational samples are a special type of convenience samples; thus, these should not be granted any special status over other convenience samples. It is worth noting that Mechanical Turk samples are not without problems; for example, Mechanical Turk respondents take less time to answer questions (Smith, Roster, Golden, & Albaum, 2016)—a problem I dealt with as part of data cleaning and preparation by removing cases with short completion times.

The second pool was based on my network of social media and personal contacts using snowball sampling. Snowball sampling "yields a study sample through referrals made among people who share or know of others who possess some characteristics that are of research interest" (Biernacki & Waldorf, 1981, p. 141). This included my personal contacts on Facebook, Twitter, and LinkedIn, totaling over 1000 individuals. For this purpose, I created a posting on my status line (Appendix F) and provided information about the purpose of the study, conditions for participation, and how long it would take to complete the survey. Additionally, I asked participants to forward this information to any individuals in their own network who might be

interested in participation. The text was reposted 10 times over the span of 5 weeks. Similarly, I sent a recruitment e-mail (Appendix G) to a selected number of personal contacts asking for either participation and/or sharing the information about the recruitment.

The survey introduction explained the purpose of the survey to the participants and who to contact in case of any concerns about the survey. I included several filter questions that excluded individuals that were not in the target population. Specifically, I excluded individuals outside the United States or Canada, anyone who had spent less than six months with their current boss, individuals younger than 25, anyone who had not completed high school, individuals working in startups, and individuals working in organizations that had fewer than 10 employees. To increase the response rate, only four of the filter questions were placed at the start of the survey. The rest were placed at the end and had to be addressed as part of the data cleaning. The rationale for each of these choices is shown in Table 3.2.

It is important to know how behaviors and opinions vary across different categories of people (Nardi, 2014); therefore, I incorporated several demographic questions at the end of the survey. Specifically, I inquired about gender, age, race, country of residence, educational level, industry, number of employees in the organization, the level of the respondent's boss in the organization, and gender of the respondent's boss.

Table 3.2

Rationale for Selection Criteria

Criteria	Rationale
Age ≥25 years old	Had some work experience.
Lives in Canada or the United States	Survey uses North American English; similarity of culture between United States and Canada in uncertainty avoidance and power distance.
Has worked with the boss for at least 6 months	Was able to observe the boss's behaviors.
Not a startup	Adaptive leadership behaviors more likely to apply in an established organization. Values, assumptions, and habits could still be forming in a startup.
Employed	Survey is asking about boss's behavior.
Has a boss, not self-employed	Survey is asking about boss's behavior.
Finished high school	Had at least high-school reading level.
Number of employees >10	Increased chance of having different stakeholders with larger number of employees.

Descriptive Statistics and Correlations

Before engaging in any analysis, the data were cleaned and incomplete responses removed. All raw data used in the scale development, excluding demographic information and answers to the open-ended question is available as a supplemental file as part of the approved dissertation. I conducted demographic analysis, exploratory factor analysis, reliability estimation, and other statistical tests using SPSS (Version 25). I used AMOS (Version 25) for confirmatory factor analysis.

Using SPSS, I calculated and presented the descriptive statistics of mean, standard deviation, and percentage distribution for each item. Many statistical procedures related to scale development assume normal distribution of item values. In fact, "items with extremely

unbalanced distributions can produce highly unstable correlational results" (Clark & Watson, 1995, p. 316). Thus, I checked for the presence of extreme skewness and kurtosis (>2.0 and >3.0 respectively) and considered eliminating abnormally distributed items. Furthermore, I calculated bivariate correlations for each item. If an item had low (≤.30) bivariate correlations with all other items designed to measure the same construct, it is assumed that the item does not measure what the rest of the items measure.

Factorial Validity

I used exploratory factor analysis as a first step to determine the number of different components that might exist for a group of items (P. Spector, 1992). In exploratory factor analysis, the researcher does not know what the structure of the data will be based on participant responses. The goal is to determine if there is a common factor that underlies the responses that tie certain items together. Statements in one factor should be highly related with each other. At the same time, they should be only weakly related to the other factors.

The statistical software package SPSS offers seven different factor extraction methods: Principal Component Analysis (PCA), alpha factoring, unweighted least squares, image factoring, generalized least squares, maximum likelihood (ML), and principal axis factoring (PAF). The choice of the extraction method depends on the degree to which the data is normally distributed. I used PCA as the extraction method because I started with the assumption that the seven sub-constructs were separate structures. Moreover, "[PCA] is not susceptible to improper solutions; it often produces results similar to exploratory factor analysis (EFA); and PCA is able to calculate a participant's score on a principal component, whereas the indeterminate nature of EFA complicates such computations" (Brown, 2015, p. 20).

To determine the number of factors to keep, one can use the Kaiser (1974) criterion based on eigenvalues. Standard practice is to use an eigenvalue of 1.0 as a cut-off point for factors. Factors having an eignenvalue of less than 1.0 are not considered (Guttman, 1954). The reason is that a factor should capture more variance than a single item (DeVellis, 2017). Alternatively, Cattell (1966) recommended the use of a scree plot to determine the number of factors. Using the scree plot, one only considers the number of factors in the steep part of the graph. Once the graph becomes flat, the flat region does not provide additional explanation of the variance in the results. I used both the Kaiser criterion and scree plot as a basis for keeping and discarding factors.

Unfortunately, the initial unrotated relationships between the different statements and what factors they load on were not obvious. To make them obvious, Abell et al. (2009) stated that the correlation matrix needs to be rotated: "When axes are rotated, it is conceptually a redistribution of explained variances to extracted factors. Therefore, nondominant factors' contribution will be amplified, whereas the contribution of the dominant factor will be suppressed to some extent" (p. 140). There are different kinds of rotation. I used varimax rotation as it is the most commonly used (Costello & Osborne, 2005) and because "researchers have traditionally perceived that orthogonally rotated solutions are more easily interpreted because the factor loadings represent correlations between the indicators and the factors" (Brown, 2015, p. 27). Once the rotation is applied, then one can look at the loadings and decide which statements load more clearly onto each component/factor. If an item cross loads on more than one factor, one might use another type of rotation to explore if the dual loading remains; otherwise, the statement can be eliminated (Mertler & Vannatta, 2010). I decided to delete items that cross loaded on more than one component.

Confirmatory Factor Analysis

Following PCA, I used confirmatory factor analysis (CFA) to test the hypothesized structure using several goodness of fit indicators. CFA is the first step of assessing model fit using Structural Equation Modeling (Little, 2013). CFA answers the question, is the "theorized construct confirmed?" (p. 63). Exploratory factor analysis is used for theory building and CFA is used for theory testing (Abell et al., 2009; Matsunaga, 2010); with exploratory factor analysis, one allows the software to extract the number of factors based on eigenvalues (Guttman, 1954) or the scree plot (Cattell, 1966). With CFA, one starts with a predetermined number of factors (based on strong theorizing or as a result of the exploratory factor analysis) and determines if this "hypothesis" holds true. Additionally, one has to specify which items load on which factors; each item will have its "unique pattern of non-zero factor loadings and zero loadings" (Matsunaga, 2010, p. 104). I initially used the two-factor model produced from PCA as the basis for my CFA model and allowed the items to load only on their respective factors.

The goodness of fit of the model is determined using a variety of global fit statistics**.** The exact fit indices evaluate model fit at an absolute level (Brown, 2015). Incremental fit indices, on the other hand, evaluate "the fit of a user-specified solution in relation to a more restricted, nested baseline model. Typically, this baseline model is a "'null' or 'independence' model in which the covariances among all input indicators are fixed to zero" (Brown, 2015, p. 72). Matsunaga (2010) recommended that the scale be evaluated in light of its exact fit (chi-square divided by degrees of freedom (CMIN/DF)), approximate fit (root mean square error of approximations (RMSEA)) and one of the incremental fit indices. I used RMSEA, comparative fit index (CFI) and goodness of fit index (GFI). If there is good fit between the model and the data, it suggests that the theoretical factor structure is confirmed (Abell et al., 2009, p. 156).

If the model does not fit the data in accordance with the theoretical model, then one makes adjustments to improve fit by making changes to the model by deleting items, revising the scale configuration, or allowing error variance to correlate (Abell et al., 2009). Additionally, modification indices can be used to detect items that are too similar to the degree that the respondents deemed them indistinguishable. Moreover, the indices will determine if the two items are related to a third unobserved factor.

CFA is run multiple times and items are eliminated or covaried to improve fit. Moreover, items with low loading and factors with less than three items are eliminated (Ullman, 2013). This process continues until the remaining model is the most parsimonious scale with the lowest possible number of items that retain a valid factor structure.

In the case of the adaptive leadership with authority scale developed in this study, I looked at modification indices and standardized residual covariances to improve fit and theoretical interpretation. Nevertheless, after arriving at an excellent fit, the model did not make sense theoretically and the two factors had high correlations indicating they might not be separate factors. Before moving to a single-factor model, I tested a second order model to see if there is a higher order factor associated with both factors. However, the second order factor was not specified. I then loaded all the items from the two factors onto one factor and improved the model fit by covarying three items because their modification indices were higher than 15 and deleted item 7B (*My boss sees how a problem in one part of the organization can affect the rest of the organization*) due to high standardized covariance residuals. The final CFA unidimensional model had a good fit and was accepted.

Reliability Estimation

As a final step in the scale development, I estimated scale reliability. The validity of a scale does not equate with its reliability, since "validity means little if the measure used is not reliable" (Nardi, 2014, p. 63). The purpose of validity is to know if the scale and its statements measure the construct. This is addressed through content validation and factor analysis. Reliability, however, is concerned with whether the scale in question will produce the same results with the same respondents if given to them a second time within a reasonable time period or with a different set of target group respondents. If it does not produce consistent results, then it is of no value to the researcher. Scale reliability is the part of variance that can be attributed to the true score of the latent variable (DeVellis, 2017). While alpha (Cronbach, 1951) is not the best reliability estimate available (Cho & Kim, 2014), it is the most commonly used; it is a lower bound for reliability estimates (DeVellis, 2017). Nunnally (1978) recommended a minimum value of .7 for Cronbach's alpha. At the end of the reliability analysis, several statements might be eliminated if their removal increases alpha without scarifying validity. However, as discussed in Chapter IV, all items had a Cronbach's alpha value of .7 or greater and removal of the items did not improve Cronbach's alpha. Thus, none of the items were removed.

Qualitative Research Question

The purpose of the fifth research question was to complement the scale development and provide insight to the resulting structure. Additionally, it should point to potential directions for future research in adaptive leadership and shed light on aspects that have been left out of the framework that are conducive to overcoming adaptive challenges. Through the text analysis and tagging functions provided in SurveyMonkey, I analyzed the resulting responses using thematic analysis.

Epistemological Approach

Scale development and validation do not always rely on statistical knowledge and can make use of mixed methods research. Mixed methods research complements traditional qualitative and quantitative research approaches (Johnson & Onwuegbuzie, 2004). It assumes that the qualitative aspects of the phenomena cannot be fully known and are socially constructed, while the quantitative aspects can be measured and reflect true reality. In the language of mixed methods, this study employed a Quan(qual) design; the order of the mixed methods research in this study is Quan with an embedded (qual) at the end of the survey in the form of an open-ended question.

Measures for Ethical Protection of Participants

To ensure no expected harm to the participants, the survey did not ask about sensitive topics. The demographic data I collected lacked the degree of specificity that would allow for identification of a particular individual or organization; for example, I did not ask about names, marital status, or date of birth. Age was collected using wide ranges as to make it difficult to identify a specific person. While the country had to be specified, I did not ask for specific location information, such as postal codes. Moreover, the ranges for the number of employees in an organization was sufficiently broad as to make it difficult to identify an organization. Data were aggregated for purposes of factor analysis and no individual responses were shown in the quantitative part of the results. Furthermore, the examples of the responses used for the codes in Chapter IV were selected to prevent any identification of the respondents.

Additionally, all participation was voluntary and anyone participating in the study could chose to terminate involvement at any time and for any reason. Moreover, informed consent was

provided as part of the pilot (Appendix E) and full study survey (Appendix H) introductory pages.

Fort, Adda, and Cohen (2011) suggested that the low wage usually offered on Mechanical Turk (under $2 per hour) is ethically problematic. To partially offset this concern, I offered $3.25 for completed surveys, which took under 20 minutes to complete. Fort et al. also point to poor employment conditions of the typical Mechanical Turk worker, something that might not be acceptable in developed countries. However, this was not a concern for this study since the survey required respondents to be already employed.

To ensure safekeeping of the data, downloaded SurveyMonkey data files, and the converted Excel, SPSS, and AMOS files were stored in a password-protected format on my personal computer and in the cloud. Finally, prior to engaging in the research, Institutional Review Board (IRB) approval was sought and granted (Appendix I) from the Antioch University IRB.

Summary of Chapter III

As I discussed in Chapter II, the main gap in the research was the absence of a validated scale to measure adaptive leadership with authority. Scale development can involve the use of mixed methods research. I have identified the qualitative and quantitative steps involved in this research study. As part of the discussion on the theoretical basis for the scale development, I have shown how my conceptualization of the construct simplifies and synthesizes other conceptualizations.

Chapter IV: Research Findings and Results

The purpose of this research study was to develop and validate a scale to measure adaptive leadership with authority and answers the following research questions:

1. What statements constitute a valid and reliable scale that can measure adaptive leadership with authority?
2. What factors emerge from factor analysis with items designed to measure adaptive leadership with authority?
3. What is the relationship between the seven proposed adaptive leadership with authority concepts and the factors resulting from the factor analysis?
4. What correlations exist between the factors that emerge from the factor analysis?
5. What behaviors of the boss contribute to the success of adaptive leadership with authority?

The first part of the chapter describes the outcomes of the scale development using factor analysis. Subsequent to describing data cleaning, data preparation, and the participant demographics for the first four research questions, I address the first four research questions. In the second part of the chapter, I discuss the demographics and analysis of responses to the part of the survey that addressed the fifth research question and summarize the findings.

Data Cleaning and Preparation

The data were downloaded from SurveyMonkey to Microsoft Excel and then uploaded to IBM SPSS. There were 702 responses in total. Responses were reviewed for eligibility and completeness. Respondents under 25-years-old, employees in firms with under 10 employees, or employees working in startups, were deleted because they were not in the target population. A survey was considered complete if participants responded to all scale statements. In total, 582

survey responses were complete. Smith et al. (2016) identified a *speeder* as a "respondent who does not thoroughly read the questions and uses minimal cognitive effort to provide answers that satisfy the question (to collect their incentive with as little time spent as possible)" (p. 3141). A large number of responses (94) were completed in what I considered a very short time—less than seven minutes compared with an average completion time of 15 minutes—and/or had a significant pattern of repetitious answers (i.e., the same answer on more than 70% of the statements). As Smith et al. did not provide rules of thumb regarding what is an appropriate cut-off criterion for speeders, I took these responses to be potential cheating by Mechanical Turk respondents and decided to remove them in order to prevent any threats to data quality. Based on univariate outlier analysis using box and whisker plots, 42 cases identified as outliers for eight or more of the proposed scale items were deleted.

Multivariate outlier analysis using Mahalanobis distance identified an additional nine cases. Mahalanobis distance was defined as "the length of the line segment between a data point and the centroid (instead of another observation) of the remaining cases, where the centroid is the point created at the intersection of the means of all the predictor variables" (Aguinis, Gottfredson, & Joo, 2013, p. 277). A high value for Mahalanobis distance may indicate that the corresponding observation is an outlier. While there are no widely available guidelines to the cut-off criterion for Mahalanobis distance, I chose .7 as a cut-off value as it resulted in removal of just nine cases and did not significantly reduce the sample size. Moreover, the .7 value covered the top quarter of the Mahalanobis outliers highlighted through AMOS. Table 4.1 provides a breakdown of the cases removed. After removing incomplete responses and cases that did not qualify, 436 responses remained and were used in the final analyses.

Table 4.1

Data Cleaning and Preparation

Reason for response removal	Number removed	Total remaining
Total		702
Not Eligible		
Did not meet initial age and employment requirements	40	662
Startup employees, or respondents working in organizations with under 10 employees	30	632
Incomplete Surveys		
Did not answer any statement beyond filter questions	17	615
Did not finish the survey through all the scale items	34	581
Potentially Biased Surveys		
Short completion time or high number of repetitious answer pattern	94	487
Cases identified as being univariate outliers on >8 of the proposed scale items	42	445
Cases with high multivariate Mahalanobis distance > .70 identified during CFA trails.	9	436

As a last step before the analysis, I recoded all reverse scored items to conform to the rest of the items. The narrative response for the demographic and filter questions that were answered as "other," and "please specify" were also coded, where appropriate, to one of the pre-coded responses for ease of statistical analysis.

Description of Participants

I found participants in this research through using various forms of email networking, referrals, and social media platforms, as well as Amazon's Mechanical Turk as

described in Chapter III. The remainder of this section summarizes the demographics of the 436 participants used in the scale development after data cleaning.

The respondents were generally well educated with a majority (67%) possessing a bachelor's degree or higher. Moreover, over a fifth (22.7%) of the respondents had a graduate degree or higher. A breakdown of educational attainment is in Table 4.2.

Table 4.2

Participants: Education

Education	**Frequency**	**%**
Finished High School	29	6.7
Some College	116	26.6
BA/BS	192	44.0
MA/MS	84	19.3
Terminal Degree (PhD, EdD, MD, J.D., etc)	15	3.4
Total	436	100.0

As indicated in Table 4.3, the sample was balanced in terms of gender with 47.9% female and the rest (52.1%) male. The percentage of females is slightly under their proportion in the general population and workforce.

Table 4.3

Participants: Gender

Gender	**Frequency**	**%**
Female	209	47.9
Male	227	52.1
Total	436	100.0

The overwhelming majority of the respondents (98.9%) were from the U.S., with just five respondents (1.1%) from Canada, as shown in Table 4.4. The small percentage of respondents from Canada was unexpected as Canada has more than a tenth the population of the United States.

Table 4.4

Participants: Country

Country	Frequency	%
US	431	98.9
Canada	5	1.1
Total	436	100.0

A variety of industries was represented by the survey respondents with the largest percentages coming from healthcare (11.9%), manufacturing (11.7%), software (8.0%) and banking (8.0%). It is noteworthy that nearly a quarter (24.5%) of the respondents were in industries that were not listed. These respondents might be employed in industries such as entertainment, sales, marketing, energy, telecommunication, transportation, construction, engineering, design, management consulting, and other services. The breakdown of industries is shown in Table 4.5.

Table 4.5

Participants: Industry

Industry	Frequency	%
Health Care	52	11.9
K-12 Education	34	7.8
Higher Education	26	6.0
Manufacturing	51	11.7
Software	35	8.0
Semiconductor	2	0.5
Fashion	5	1.1
Energy	6	1.4
Banking/Finance	35	8.0
Insurance	8	1.8
Hospitality	15	3.4
Food/Beverage	13	3.0
Chemical	1	0.2
Government	32	7.3
Not for profit	13	3.0
Other/Not specified	108	24.7
Total	436	100.0

Over a quarter (28.2%) of the respondents' organizations were large, with over 1000 employees, and over half (50.7%) of the organizations were small with 250 employees or less. The breakdown of organization size is shown in Table 4.6.

Table 4.6

Participants: Organization Size

# of employees	Frequency	%
10–50	87	20.0
51–250	134	30.7
251–500	48	11.0
501–1000	44	10.1
>1000	123	28.2
Total	436	100.0

The largest percentage (38.5%) of respondents was in the 31–40 age group, followed by 25.2% in the 41–50 age group and 20.6% in the 25–30 age group. It is noteworthy that a very small percentage (0.7%) of respondents belonged to the older than 70 age group, having continued employment beyond the typical retirement age. (See Table 4.7.)

Table 4.7

Participants: Age

Age	Frequency	%
25–30	90	20.6
31–40	168	38.5
41–50	110	25.2
51–59	38	8.7
60–70	27	6.2
Older than 70	3	0.7
Total	436	100.0

The percentage of White respondents in the sample was very close to the general population at 78.7%. Hispanics/Latinos and African Americans were underrepresented in the sample at 8% and 3.9% respectively. Asians (6.4%) were slight overrepresented compared with the general population. (See Table 4.8).

Table 4.8

Participants: Race

Race	Frequency	%
Asian	28	6.4
Black or African American	35	8.0
Hispanic or Latino	17	3.9
Native American	2	0.5
White	343	78.7
Other/Not disclosed	11	2.5
Total	436	100.0

As shown in Table 4.9, the boss's level in the organization had a significant amount of middle and upper managers at 48.6 and 32.8% respectively. The vast majority of the rest were lower-level managers (16.1%) with a few identified as other or not specified (0.5 %).

Table 4.9

Participants: Their Boss's Level

Level	**Frequency**	**%**
Lower manager/supervisor	70	16.1
Middle manager/project or program director	212	48.6
Upper manager/CEO level/Officer/Partner	143	32.8
Other/Not specified	11	2.6
Total	436	100.0

While the overall sample was balanced in terms of gender, the boss's gender was skewed towards males with 61.1% of the sample male as shown in Table 4.10. This imbalance can be attributed to the ongoing problem of the glass ceiling facing many women today.

Table 4.10

Participants: Their Boss's Gender

Gender	**Frequency**	**%**
Female	182	38.6
Male	288	61.1
Not Specified	1	0.2
Total	471	100.0

The majority of the sample was obtained from Mechanical Turk. Only 7.3% of the respondents were from snowball sampling via social media links. The rest were from Mechanical Turk (92.7%) respondents. (See Table 4.11).

Table 4.11

Source for Participant Sample

Sample Source	Frequency	%
Snowball sampling through social media & e-mail	32	7.3
Mechanical Turk	404	92.7
Total	436	100.0

Data Analysis

This section discusses the results of the exploratory factor analysis, confirmatory factor analysis, and reliability optimization used to address the first four research questions and to produce the Raei Adaptive Leadership with Authority Scale.

Research Question 1

Research Question 1 was: "What statements constitute a valid and reliable scale that measures adaptive leadership with authority?" I defined adaptive leadership as leadership that helps groups, departments, and organizations face hard problems–problems that require a change in habits, values, or assumptions; that is, it requires change that often involves prolonged learning and experimentation. Because these problems are tough, and might need people to change their values, habits, and assumptions, trying to deal with these problems can sometimes result in resistance and conflict. Moreover, adaptive leadership with authority is adaptive leadership as exercised from a position of power. Using this theoretical base, the Adaptive Leadership with Authority construct was operationalized into seven sub-constructs as discussed in Chapter III. Items were then created to cover each of the sub-constructs. Table 4.12 defines each of the theorized adaptive leadership sub-constructs.

Table 4.12

Adaptive Leadership with Authority Sub-Constructs

Sub-construct	Variable name	Definition
Distinguish Between Adaptive and Technical Challenges	AdapNdTeK	The boss determines whether the problem is adaptive or technical. Adaptive problems are systemic, require change in habits, values, beliefs, or assumptions, and demand learning and experimentation. Technical problems can be fixed with technical means. In the technical case, the solution is within the existing capabilities of the group, department or organization; the organization has the staff to implement the solution or can hire someone with the knowledge to do it.
Use of Self	USOSLF	The boss knows their limitations and their influence on other people. The leader has high self-awareness and uses it in service to the change process. Also, the leader uses this awareness to prevent themselves from getting derailed.
Identify the Stakeholders and their Losses	IdenStkHnLoss	In this step, the boss identifies the different people and groups that might be affected by the change. Moreover, the leader determines to what degree the change would affect the stakeholders negatively and what they might stand to lose through the process.
Create the Holding Environment and Invite the Stakeholders to do the adaptive work	HLDnSTK	The boss brings the different people who need to work on the challenge together. Moreover, they create a space for people to discuss and work out differences in ideas and be able to engage in conflict to arrive at the eventual "solution."
Regulate the Distress	RegDiss	The boss prevents conflict and stress from blowing up. At the same time, they keep a level of urgency and focus on the important issues.
Give the Work Back	GivBk	The boss puts some pressure on the people with the problem; the leader moves the responsibility for the work to the front lines and makes sure that he gives back ownership, and responsibility to individuals and groups at a speed they can handle.
Protect Voices of Leadership without Authority	ProtekVoicz	The boss offers cover to those who raise tough questions and produce stress. People who point to the disconnection between what people say and do.

Descriptive Statistics and Correlations. Descriptive statistics were run for each of the scale items. The mean, standard deviation, and measures of skewness and kurtosis were computed for each item (Table 4.13). The survey responses were coded as 1 (strongly disagree), 2 (disagree), 3 (slightly disagree), 4 (slightly agree), 5 (agree), and 6 (strongly agree).

Table 4.13

Descriptive Statistics

Variable /Sub-Construct Name	Item	Mean	Standard Deviation	Skewness	Kurtosis
AdapNdTeK (Distinguish between Adaptive and Technical Challenges)	5A. My boss recognizes that our challenges are complex.	4.82	0.841	-0.893	1.762
	6E. My boss communicates that others can contribute to finding solutions.	4.75	1.073	-1.062	1.182
	7B. My boss sees how a problem in one part of the organization can affect the rest of the organization.	4.64	1.062	-0.901	.810
	7H. My boss focuses on the big picture.	4.77	1.140	-1.189	1.484
	14D. My boss recognizes that we have to leave some of our old ways behind.	4.42	0.992	-0.805	1.219
	7 F. My boss recognizes that change might require sacrifices	4.69	0.907	-0.645	.702
	8A. My boss communicates that to overcome our biggest challenge, we might have to change our priorities.	4.45	1.015	-0.764	.586
	9C. My boss recognizes that there is no quick fix for our biggest challenges.	4.61	1.035	-0.772	.497
	9F. My boss encourages us to focus on the long term, as well as the short term.	4.70	1.109	-1.015	.862
USOSLF (Use of Self)	5B. My boss listens well before talking.	4.57	1.159	-0.966	.854
	7C. My boss lives by his/her values.	4.72	0.990	-0.925	1.135
	11E. To get people to focus on the main problem, my boss tries something, and if it doesn't work, tries something else.	4.34	1.124	-0.746	.250
	13F. My boss admits his mistakes.	4.36	1.282	-0.741	.029
	13H. My boss recognizes the impact of their mood and actions on others.	4.23	1.285	-0.751	-.015
	14B. My boss Is willing to give up some of his/her authority.	3.73	1.375	-0.427	-.683
	12E. My boss keeps his/her cool when things hit the fan.	4.49	1.296	-1.018	.502

Table 4.13 (continued)

Variable /Sub-Construct Name	Item	Mean	Standard Deviation	Skewness	Kurtosis
HLDnSTK (Create the Holding Environment and Invite the Stakeholders)	5E. My boss creates a space where it is safe to discuss what everyone knows but might be afraid to bring out into the open.	4.23	1.250	-0.677	-.0199
	6D. When change is expected, my boss invites everyone who needs to be present to the table.	4.50	1.264	-0.997	0.562
	10G. My boss tolerates my mistakes if there is no major damage.	4.61	1.108	-1.111	1.450
	6G. My boss allows us to occasionally act as devil's advocates.	3.68	1.321	-0.408	-0.569
	7G. My boss brings those who need to be involved to work on our challenges into the discussion.	4.63	1.139	-1.135	1.313
	8F. My boss encourages us to tell him/her if we think that we are going in the wrong direction.	4.37	1.244	-0.943	0.542
	8C. My boss creates an environment where we can have conflict about our ideas without getting into personal attacks.	4.37	1.268	-0.892	0.418
	8H. My boss creates a space where I feel safe when I point to a contradiction between what we say we do and what we actually do.	4.43	1.260	-0.903	0.398
	14E. My boss creates a sufficiently comfortable environment in which we can air our concerns, share our ideas, and discuss our differences.	4.53	1.240	-1.043	0.616
RegDiss (Regulate the Distress)	6A. My boss can read the room during meetings.	4.38	1.056	-0.785	0.774
	6H. My boss helps us prioritize dealing with the different challenges.	4.53	1.042	-0.893	1.052
	8B. My boss prevents us from becoming complacent.	4.09	1.186	-0.635	0.053
	9G. When we are trying to avoid the real issues, my boss brings us back to the real problem.	4.30	1.164	-0.753	0.207
	11G. My boss prevents us from getting too distracted by immediate but unimportant concerns.	4.08	1.118	-0.591	-0.025
	12G. My boss knows when to bring up an important issue, and when to hold off.	4.48	1.200	-0.957	0.712
	13C. My boss is a good judge of how much we can handle.	4.41	1.248	-0.914	0.413

Table 4.13 (continued)

Variable /Sub-Construct Name	Item	Mean	Standard Deviation	Skewness	Kurtosis
GivBk (Give the Work Back)	6C. My boss encourages us to have our own opinions.	4.63	1.170	-0.919	0.558
	10E. When my boss lacks the solution to my problem, they ask me questions that encourage me to think about options I have not considered.	4.36	1.245	-0.866	0.370
	11B. My boss gives people time to learn from their mistakes.	4.61	1.072	-1.036	1.293
	11F. My boss makes me feel free to take responsibility.	4.69	1.110	-1.217	1.677
IdenStkHnLoss (Identify the Stakeholders and their Losses)	5G. My boss reaches out to influential individuals in the organization to help identify the different stakeholders affected by change.	4.18	1.174	-0.621	0.121
	7E. My boss tries to find out who will be affected by proposed changes.	4.42	1.173	-0.822	0.297
	10A. My boss tries to understand why people might resist change.	4.23	1.115	-0.772	0.398
	10C. My boss tries to find out how we will be affected by the proposed changes.	4.54	1.127	-1.010	0.960
	10H. When dealing with work challenges, my boss asks who else needs to be involved.	4.39	1.136	-0.854	0.675
ProtekVoicz (Protect Voices of Leadership without Authority)	8G. My boss includes people who might disagree with them in their inner circle.	4.19	1.225	-0.774	0.267
	12B. When the group is ganging up on someone for offering a different opinion, my boss asks the rest of the group to hear them out.	4.31	1.208	-0.702	0.275
	12D. My boss makes people comfortable bringing up bad news.	4.01	1.315	-0.568	-0.380
	12F. My boss accepts when his assumptions and logic are rightly challenged.	4.27	1.173	-0.805	0.414
	12H. My boss is comfortable with individuals respectfully asking tough questions about the nature of the challenges we are facing.	4.64	1.173	-1.114	1.074

High skewness and/or kurtosis indicate a deviation from normal distribution. Since, many procedures involved in scale development assume a normal distribution, I examined the items for

high skewness or kurtosis. Both the measures of skewness and kurtosis showed acceptable values below 2.0 and 3.0, respectively for all items and thus no items were removed at this stage. Additionally, I ran the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's test of sphericity (Table 4.14). The former is used to detect suitability for structure detection, while the latter is used to indicate that factor analysis might be applicable for use with the data. The value for KMO should be close to 1 (Kaiser, 1974) and for Barlett's test, below .05 significance. Both of these conditions were satisfied.

Table 4.14

KMO and Barlett's Tests

Test		**Result**
KMO Measure of Sampling Adequacy		.981
Bartlett's Test of Sphericity	Approx. Chi-Square	15256.291
	df	1035
	Sig.	.000

Exploratory Factor Analysis–Principal Component Analysis (PCA)

In the next step, I calculated Pearson bivariate correlations between the items and identified items that did not have a correlation of .3 or above with any of the other items. Items that do not have a ≥.30 correlation with at least one other item are viewed as being unrelated to the overarching construct. Items 13A (*My boss thinks that using technology to put policies and procedures in place will solve our problem*), 13D (*My boss does not clean up our messes for us*), and 14D (*My boss recognizes that we have to leave some of our old ways behind*) did not meet the =>.30 criteria and thus were eliminated. Two additional items, 10B (*When our values seem to get in the way of work, my boss challenges them*) and 13G (*When there is a problem, my boss immediately jumps into action*), were deleted due to mixed or high negative bivariate correlations

with multiple items. I determined that these items were not sufficiently clear and thus were producing inconsistent responses with both positive and negative correlations with the other items. Finally, I also identified an item that was duplicated in the survey. Item 5E (*My boss creates a space where it is safe to discuss what everyone knows, but might be afraid to bring out into the open*) was identical to item 13B. I decided to eliminate item 13B because it appeared later in the survey and the respondents might have experienced response fatigue by the time they reached that point in the survey.

Principal Component Analysis (PCA) using variamax rotation was initially run with the loading cut-offs of .40, .45, .50, and .55. Following these initial trial runs, I deleted three items, 5D (*My boss is comfortable with conflict)*, 5H (*My boss likes to be constantly fighting fires*), and 9B (*My boss shares his/her observations about how we are acting*) that despite being originally designed to be positive statements had repeated negative factor loadings during the initial PCA runs. Moreover, after multiple runs of PCA at various loading suppressions, it became apparent that the reverse scored items tended to load together under the same component, irrespective of their target sub-construct. Thus, I decided to delete the reverse scored items before conducting the final PCA. I settled on the use of a .40 loading suppression as it yielded a factor structure that made the most sense theoretically and was interpretable. Table 4.15 shows the number of items deleted leading to the final PCA.

As indicated in Chapter III, the relationship between the items and the components they load on was not apparent at first sight. PCA is a data reduction procedure; it keeps the items that load together on factors and eliminates those items that do not load on any component or cross load on multiple components/factors.

Table 4.15

Items Removal Before PCA

Reason for removal before PCA	Count
a Multiple negative bivariate correlations	2
b Correlations of under .3 with all items	3
c Negative component loadings during initial PCA runs	3
d Duplicate statements	1
e Reverse scored item	23
Total	32

Rotation does not affect the data, but allows the data to be better visualized by the researcher. When the data are rotated, the items that do not load on a factor or that have high loadings on multiple factors are eliminated. However, because items are in relationship with each other, the factor loadings change after each new run following removal of some items. Moreover, it is common for each run to reduce the number of components until the final number of components is reached.

Table 4.16 shows the starting number of items and the number of items deleted after each run of PCA. Twenty items were deleted after the first run, 10 after the second run, and one after the third run, until the final and fourth run with no deletions.

Table 4.16

PCA Item Removal

Run	Number items entered	Number items eliminated
1st run	46	20
2nd run	26	10
3rd run	16	1
4th run	15	0

Table 4.17 shows the final result of the PCA with varimax rotation and the .40 loading cut-off. The first component I named Create a Holding Environment since the items can

contribute either directly or indirectly to creating a holding environment. The second component I named Distinguish Between Adaptive and Technical Challenges since it had the three items related to this sub-construct.

Table 4.17

PCA Final Model

Rotated Component Matrix[a]

Sub-construct	Item wording	Component: Create the Holding Environment	Component: Distinguish Between Adaptive and Technical Challenges
HLDnSTK	8C. My boss creates an environment where we can have conflict about our ideas without getting into personal attacks.	.699	
ProtekVoicz	12D. My boss makes people comfortable bringing up bad news.	.707	
GivBK	11B. My boss gives people time to learn from their mistakes.	.765	
USOSLF	13F. My boss admits his mistakes.	.720	
USOSLF	14B. My boss Is willing to give up some of his/her authority.	.591	
HLDnSTK	5E. My boss creates a space where it is safe to discuss what everyone knows but might be afraid to bring out into the open.	.656	
HLDnSTK	10G. My boss tolerates my mistakes if there is no major damage.	.801	
AdapNdTeK	5A. My boss recognizes that our challenges are complex.		.587
AdapNdTeK	7B. My boss sees how a problem in one part of the organization can affect the rest of the organization.		.659
AdapNdTeK	14D. My boss recognizes that we have to leave some of our old ways behind.		.625
HLDnSTK	6G. My boss allows us to occasionally act as devil's advocates.		.454
RegDiss	6A. My boss can read the room during meetings.		.632
RegDiss	8B. My boss prevents us from becoming complacent.		.540
RegDiss	11G. My boss prevents us from getting too distracted by immediate but unimportant concerns.		.520
IdenStkHnLoss	5G. My boss reaches out to influential individuals in the organization to help identify the different stakeholders affected by change.		.694

Note. Extraction method: PCA. Rotation method: varimax with Kaiser normalization. Rotation converged in 3 iterations.

Confirmatory Factor Analysis

As indicated in Chapter III, the goal of confirmatory factor analysis (CFA) was to test the hypothesized structure (model) produced by exploratory factor analysis. In CFA, the researcher assigns each item from the PCA analysis results to their corresponding factor. The goodness of fit of the model is determined using fit indices. It is common practice to use more than one global fit index to ascertain fit. I selected three absolute fit indices: Normed chi-square (CMIN/DF), Global fit index (GFI), and Root mean square error of approximation (RMSEA) and one incremental fit index (Comparative fit index (CFI)). The absolute fit indices evaluate model fit at an absolute level (Brown, 2015). Incremental fit indices evaluate "the fit of a user-specified solution in relation to a more restricted, nested baseline model. Typically, this baseline model is a 'null' or 'independence' model in which the covariances among all input indicators are fixed to zero" (Brown, 2015, p. 72). The advantage of using multiple fit indices is that each determines a different aspect of fit and taken together can provide a good measurement of model fit.

Global fit indices are helpful in determining overall fit. However, when fit needs to be improved, they do not identify where the problem in the model might be. For this purpose, one can examine modification indices and standardized residual covariances. Modification indices are used to detect items that are too similar to the degree that the respondents deemed them indistinguishable. If that is the case, the items are covaried or one of the items is deleted. Standardized residual covariances identify the discrepancy between the proposed model and the estimated model (Gaskin, 2011). I tested the 15-item two-factor PCA result model using AMOS with each of the variables assigned to its corresponding component.

Initial two-factor model. This initial two-factor model had a very good fit with a CMIN/DF of 2.095, CFI=.96, RMSEA= .05, and GFI=.948 compared with Hu and Bentler's (1999) recommendations for good and excellent fit (Table 4.18).

Table 4.18

Initial and Final Model Fit

Global index	**Good fit (**Hu & Bentler, 1999)	**Excellent fit (**Hu & Bentler, 1999)	**Initial two-factor model**	**Final two-factor model**
CMIN/DF	<3		2.095	1.912
GFI		>.95	.948	.957
CFI	>.9	>.95	.96	.972
RMSEA	.06-.10	<.05	.05	.046

After first covarying items 10G (*My boss tolerates my mistakes if there is no major damage*) and 11B (*My boss gives people time to learn from their mistakes*) based on high modification indices values (>15), I deleted item 6G (*My boss allows us to occasionally act as devil's advocates*) due to high standardized residual covariances. I used an absolute value of greater than 2.0 as the cut-off criterion for residuals as recommended by Gaskin (2011). I arrived at an excellent fit with a CMIN/DF= 1.912, GFI=.957, CFI=.972, and RMSEA=.046. Nevertheless, as shown in Figure 4.1, the two factors that resulted from PCA had a high (.84) correlation indicating that the two factors had poor discriminant validity and may not have been separate factors. Moreover, the model did not make sense from a theoretical point of view; items that did not appear to be related to the Distinguish Between Adaptive and Technical Challenges were part of that factor. For example, item 8B (*My boss prevents us from becoming complacent*) did not fit with the Distinguish Between Adaptive and Technical Challenges sub-construct.

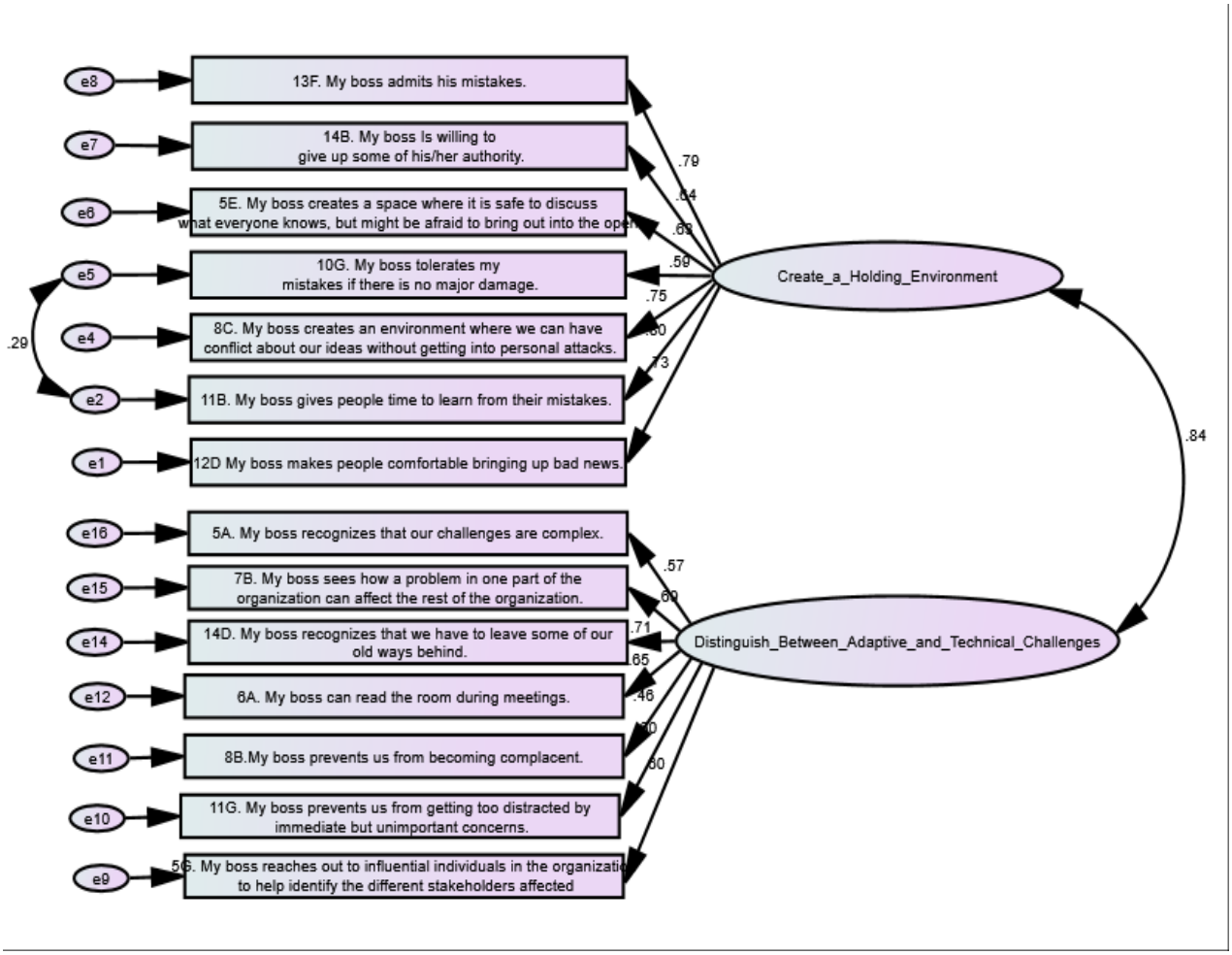


Figure 4.1. Final two-factor model.

It is the theory that delineates a satisfactory model from among all possible models underlying a particular dataset (James, Brett, & Mulaik, 1982). Due to the high correlations between the two factors in the model, I looked for the possibility of the existence of a second order factor (Figure 4.2).

Figure 4.2. Second-order model.

However, the model based on a second order factor could not be specified. Thus, I considered a unidimensional option.

Unidimensional Scale

Brown (2015) states:

> The results of an initial CFA may indicate that some factors have poor discriminant validity (e.g., two factors are so highly correlated that the notion that they represent distinct constructs is untenable). Based on this outcome, the model may be respecified by collapsing the highly overlapping factors; that is, the indicators that loaded on separate, overlapping factors are respecified to load on a single factor. Although this respecification may foster the parsimony and interpretability of the measurement model,

> it will lead to some decrement in goodness of fit relative to the more complex initial solution. (p. 140)

I discarded the two-factor model and loaded the items from it onto one factor, in the process creating a unidimensional scale. Subsequently, I tested the unidimensional model's global fit. The initial fit had a CMIN/DF of 2.646, CFI=.918, RMSEA= .059, and GFI=.838, suggesting a good fit (Table 4.19).

Table 4.19

Initial and Final Model Fit

Global index	**Good fit (**Hu & Bentler, 1999)	**Excellent fit (**Hu & Bentler, 1999)	**Initial single-factor model**	**Model before deleting low loading items**	**Final single-factor model**
CMIN/DF	<3		2.646	2.270	2.478
GFI		>.95	.838	.948	.954
CFI	>.9	>.95	.918	.964	.968
RMSEA	.06–.10	<.05	.059	.054	.058

I then proceeded to make changes based on the values for the modification indices and standardized residual covariances to improve fit. I covaried three items: 5A and 5G, because their modification indices were higher than 15, and the deleted item 7B (*My boss sees how a problem in one part of the organization can affect the rest of the organization*), based on high standardize covariance residuals (>2). The resulting model had a CMIN/DF of 2.270, CFI=.964, RMSEA= .054 and GFI=.948, suggesting a good fit (Table 4.20; see also Figure 4.3).

As a final step before optimizing reliability, I inspected each item's loading. Generally, items having a high loading are considered strongly related to the construct (Tabachnick & Fidell, 2001). The factor loadings are shown in Table 4.21. The items 8B (*My boss prevents us from becoming complacent*), 5A (*My boss recognizes that our challenges are complex*), and 5G (*My boss reaches out to influential individuals in the organization to help identify the different*

stakeholders affected by change), had loadings of .42, .49, and .50 respectively. I decided to remove items with loadings of less than .5 (items 8B and 5A) since they explain less than 25% of the variance. The resulting final single-factor model had a CMIN/DF of 2.478, CFI=.968, RMSEA=.058, and GFI=.954 (Table 4.19, Figure 4.3) which is worse than the fit from the final two-factor model. However, as suggested by Brown (2015), the change from the two-factor model to the single-factor model improved the parsimony and interpretability of the model at the expense of a small decrease of goodness of fit.

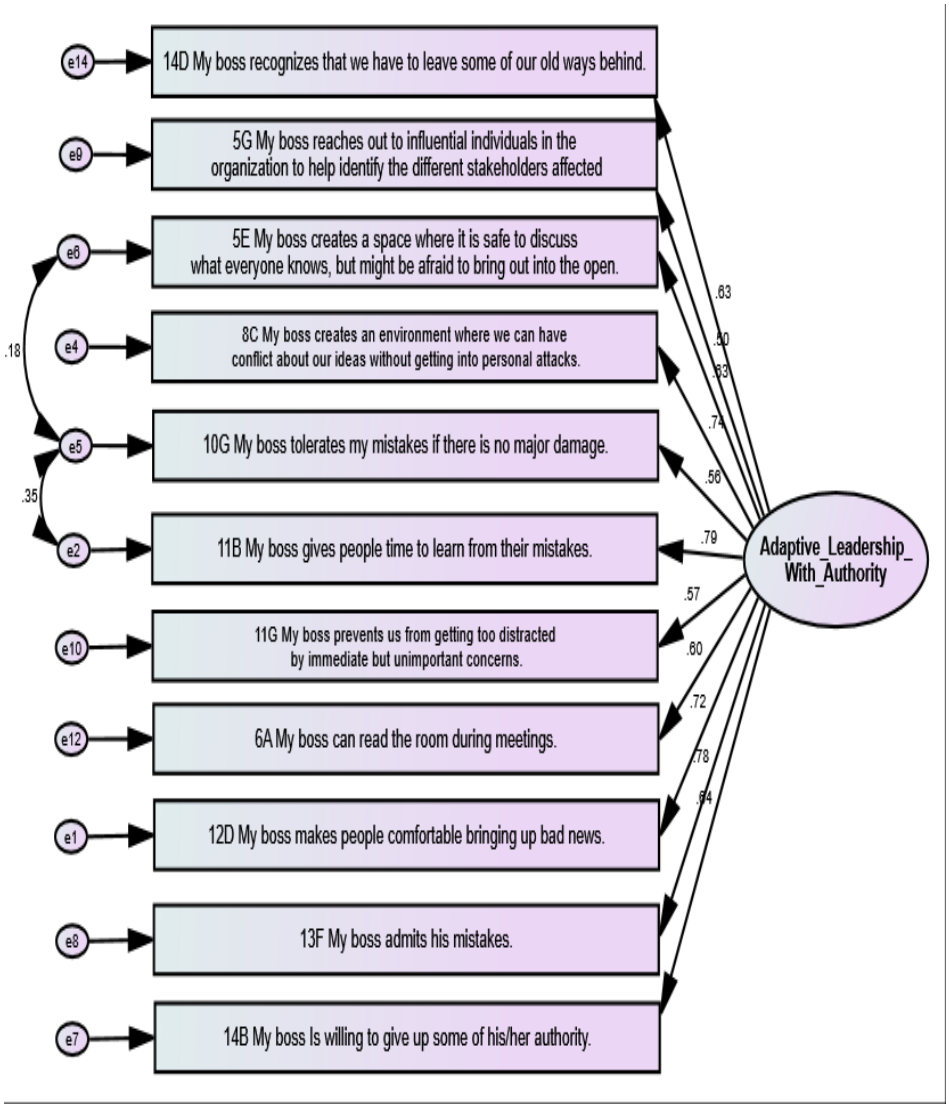


Figure 4.3. Final Raei Adaptive Leadership with Authority scale.

Optimizing Reliability for the Scale

Since the scale is unidimensional, I used Cronbach's alpha to estimate reliability for each item and for the scale as a whole. I also computed alpha if the item was removed as shown in Table 4.20 and Table 4.21. None of the items provided any significant increase in Cronbach alpha if deleted. Thus, the final scale remained unchanged and had a high reliability of .891.

Table 4.20

Scale Cronbach's Alpha

Cronbach's Alpha	N of Items
.891	11

Table 4.21

Final Items with Loadings and Cronbach's Alpha If Item Deleted

Variable Name	Item (Loading)	Cronbach's Alpha if Item Deleted
Q14DAdapNdTeK	My boss recognizes that we have to leave some of our old ways behind (.64).	.883
Q5GIdenStkHnLoss	My boss reaches out to influential individuals in the organization to help identify the different stakeholders affected by change (.50).	.889
Q5EHLDnSTK	My boss creates a space where it is safe to discuss what everyone knows, but might be afraid to bring out into the open (.63).	.882
Q8CHLDnSTK	My boss creates an environment where we can have conflict about our ideas without getting into personal attacks (.74).	.876
Q10GHLDnSTK	My boss tolerates my mistakes if there is no major damage (.79).	.885
Q6ARegDiss	My boss can read the room during meetings (.60).	.884
Q11GRegDiss	My boss prevents us from getting too distracted by immediate but unimportant concerns (.57).	.885
Q11BGivBK	My boss gives people time to learn from their mistakes (.79).	.873
Q12DProtekVoicz	My boss makes people comfortable bringing up bad news (.72).	.877
Q13FUSOSLF	My boss admits his/her mistakes (.78).	.873
Q14BUSOSLF	My boss is willing to give up some of his/her authority (.64).	.883

Research Questions 2, 3, and 4

Research questions 2, 3, and 4 were concerned with the relationship between the factors and the statements that emerged from the factor analysis. When tested using CFA, the two components resulting from the PCA were highly correlated (r =.84) and did not make sense theoretically. Thus, an alternative unidimensional one-factor model was tested and was accepted.

Given its unidimensionality, the model did not map to a scale with seven separate components as predicted from the operationalization. Nevertheless, it included items representing each of the sub-components as part of the unidimensional scale. It is significant that the items in the final unidimensional scale covered the breadth of the seven proposed sub-constructs: Distinguish Between Adaptive and Technical Challenges; Identify the Stakeholders and their Losses; Create the Holding Environment; Regulate the Distress; Protect Voices of Leadership without Authority; Give the Work Back; and Use of Self. Items from each of these seven constructs are included in the unidimensional scale.

Contrary to the theoretical predictions, the unidimensional structure showed that the overarching adaptive leadership with authority construct was not defined into separate sub-constructs. In other words, the sub-constructs were not separate domains. Table 4.22 shows each item in the Raei Adaptive Leadership with Authority Scale with their respective target sub-constructs. In the remainder of the chapter, the narrative analysis of respondents' views of their boss' actions provided support for six of the seven Adaptive Leadership With Authority sub-constructs.

Table 4.22

The Raei Adaptive Leadership With Authority Scale

Item	Target sub-construct
14D. My boss recognizes that we have to leave some of our old ways behind.	Distinguish Between Adaptive and Technical Challenges
5G. My boss reaches out to influential individuals in the organization to help identify the different stakeholders affected by change.	Identify the Stakeholders and their Losses
5E. My boss creates a space where it is safe to discuss what everyone knows but might be afraid to bring out into the open.	Create the Holding Environment
8C. My boss creates an environment where we can have conflict about our ideas without getting into personal attacks.	Create the Holding Environment
10G. My boss tolerates my mistakes if there is no major damage.	Create the Holding Environment
6A. My boss can read the room during meetings.	Regulate the Distress
11G. My boss prevents us from getting too distracted by immediate but unimportant concerns.	Regulate the Distress
11B. My boss gives people time to learn from their mistakes.	Give the Work Back
12D. My boss makes people comfortable bringing up bad news.	Protect Voices of Leadership without Authority
13F. My boss admits his/her mistakes.	Use of Self
14B. My boss is willing to give up some of his/her authority.	Use of Self

Research Question 5

What behaviors of the boss contribute to the success of adaptive leadership with authority? This appeared in the survey as the open-ended question: If your organization/team was able to overcome a challenge that required a change in values, assumptions, or habits, what is one thing that your boss, or head of the organization, did that contributed the most to success?

Short completion time (<7 minutes) did not affect the validity and integrity of the narrative results. Similarly, the small size of the organization (<10 employees) or being a startup did not affect the validity and integrity of the narrative answers. Thus, unlike the subset sample used for the first four research questions and the scale development, no exclusion criteria were used. Of the 584 survey respondents that reached the end of survey statements, 550 answered the opened-ended question. Their 550 narrative responses were used for the Research Question 5 analysis.

Demographics for the open-ended question. Similar to the subset sample used in the quantitative analysis, the sample for the open-ended question was dominated by the Mechanical Turk sample (93.5%) as shown in Table 4.23. Only a small percentage of the respondents (6.5%) came from snowball sampling.

Table 4.23

Sample Source

Sample source	Frequency	%
Snowball sample via social media	36	6.5
Mechanical Turk	514	93.5
Total	550	100.0

The gender distribution was balanced, with 50.9% of respondents self-identifying as male, 48.7% self-identifying as female, and the rest (0.4%) as other, as shown in Table 4.24. However, the percentage of females in the sample was lower than in the workforce and general population.

Table 4.24

Respondents by Gender

Gender	Frequency	%
Female	268	48.7
Male	280	50.9
Other	2	0.4
Total	550	100.0

The vast majority of the sample resided in the United States with only six individuals living in Canada as indicated in Table 4.25. This was similar to the subset sample used in the quantitative analysis.

Table 4.25

Respondents by Country

Gender	Frequency	%
US	544	98.9
Canada	6	1.1
Total	550	100.0

The largest percentage of respondents was from manufacturing (11.8%), health care (11.1 %), banking/finance (8.4%), and government (8.0%) as shown in Table 4.26. It is notable that almost a quarter of the respondents (24.4%) chose “other” or did not specify their industry.

Table 4.26

Respondents by Industry

Industry	Frequency	%
Health Care	61	11.1
K-12 Education	40	7.3
Higher Education	32	5.8
Manufacturing	65	11.8
Software	42	7.6
Semiconductor	2	0.4
Fashion	7	1.3
Energy	6	1.1
Banking/Finance	46	8.4
Insurance	10	1.8
Hospitality	20	3.6
Food/Beverage	22	4.0
Chemical	2	0.4
Government	44	8.0
Not for profit	17	3.1
Other/Not specified	134	24.4
Total	550	100.0

Just over half (50.4%) of the organizations had less than 250 employees. Over a third (35.2%) of the organizations had more than 500 employees as shown in Table 4.27.

Table 4.27

Respondents by Organization Size

Size	Frequency	%
<10	25	4.5
10-50	110	20.0
51-250	167	30.4
251-500	54	9.8
501-1000	53	9.6
>1000	141	25.6
Total	550	100.0

Only a very small percentage (0.2%) of the respondents were under 25. The largest percentage of respondents came from the 31–40 age group (38.2%), followed by the 25–30 (23.8%) and 41–50 age groups (23.6%) as shown in Table 4.28.

Table 4.28

Respondents by Age

Age	Frequency	%
Under 25	1	0.2
25–30	131	23.8
31–40	210	38.2
41–50	130	23.6
51–59	46	8.4
60–70	29	5.3
Over 70	3	0.5
Total	550	100.0

As shown in Table 4.29, Whites represented a majority of the sample (79.5%), followed by African Americans (8.2%), Asians (6.0%), Hispanics/Latinos (3.8%), and Native Americans (0.7%). Only a small percentage of respondents (1.8%) selected other. This could be due to being of mixed race, but also due to a mismatch between self-identification and choice of race categories.

Table 4.29

Respondents by Race

Race	Frequency	%
Asian	33	6.0
Black or African American	45	8.2
Hispanic or Latino	21	3.8
Native American	4	0.7
White	437	79.5
Other	10	1.8
Total	550	100.0

Research Question 5 Analysis. Using thematic analysis, I assigned 98 initial codes (Appendix L) to the statements. Table 4.30 shows the 28 most frequently used initial codes.

Table 4.30

Top Initial Codes

Rank	Initial Code	Example	Relevant Sub-construct	Frequency
1	Communicate *about* change	"He was transparent throughout the entire process and let all of the employees know what was happening. It made the transition much easier."	Use of Self	64
2	Listen	"My boss listened to others suggestions on how to make our new educational curriculum beneficial to the elementary students. He understood that he did not know everything about this new program and was willing to gather more information in order for the school as a whole to be successful."	Use of Self	42
3	Provided solution	"My boss is the one who actually [was] thinking outside the box about the changes [that] need[ed] to be made and advocate[d] for these changes…The only way real change happen[ed] [was] by him doing this."	Use of Self, Regulate the Distress (implicit)	33
4	Get input	"Ask for the team opinion and ideas on the challenge, rather than give the idea herself."	Identify the Stakeholders (implicit), Regulate the Distress, Create the Holding Environment, Give the Work Back	30
5	Give the work back	"Stop micro-management and allow employees to exercise their knowledge."	Give the Work Back	29
6	Bring people together	"Brought us all together to brainstorm and come to a mutual agreement."	Create the Holding Environment, Give the Work Back	27

Table 4.30 (continued)

Rank	Initial Code	Example	Relevant Sub-construct	Frequency
7	Welcome ideas	"Allowed people to contribute their ideas to solve the situation."	Give the Work Back	26
8	Provide support	"He's supportive and helps us with whatever he can."	Regulate the Distress	26
9	Keep his/her cool	"Keep a level head, the fact that he assessed and kept cool under so much stress was impressive and enduring to us all."	Use of Self, Regulate the Distress (indirect effect)	23
10	Provide resources	"He put the right resources in place to allow us to shift our assumptions without hurting our overall strategy to market."	Regulate the Distress	22
11	Role model	"Anytime there's a change like that, my boss leads by example."	Use of Self	20
12	Create a safe space	"He allowed us to voice our concerns in a safe environment so that we could all discuss ways to overcome our troubles."	Create the Holding Environment	18
13	Provided idea	"I think her biggest asset is that she is willing to think outside the box so to speak. If the normal way does not work, then she some sometimes comes up with creative ways to deal with issues that arise."	Regulate the Distress	17
14	Provide direction/vision	"My boss's primary contribution would be to develop the overall framework and vision for how to overcome the challenge."	Give the Work Back	12
15	Boundary buffering	"He will step in when people are jumping down our necks to get something done. He makes other people realize what we actually need to get done to make the whole ship stay afloat."	Regulate the Distress	11
15	Provide training	"[She] offers extra training time in private for the things we need help with."	Regulate the Distress	11
16	Invite ideas	"My boss encouraged all employees to bring any ideas to her to improve patient satisfaction."	Give the Work Back, Create the Holding Environment	10

Table 4.30 (continued)

Rank	Initial Code	Example	Relevant Sub-construct	Frequency
16	Positive attitude	"Always stays positive."	Use of Self	10
16	Stay out of the way	"Lets other people do their job without interference."	Give the Work Back	10
17	Cross boundaries	"My boss went outside the organization to get a different perspective on the problem."	Distinguish Between Adaptive and Technical Challenges (implicit), Identify the Stakeholders	9
17	Encourage	"Try to encourage people to find the positive path of overcoming situations like this."	Regulate the Distress	9
17	Trust	"My boss tells us that she knows we can handle the change and she knows who to assign to help others with the challenge."	Regulate the Distress Create the Holding Environment	9
18	Provide accountability	"He made sure to check in with us every day so that we knew we were accountable to him, and he reminded us of the consequences of failure."	Regulate the Distress	8
18	Perseverance	"[He] shows us that anything is possible and to not give up. He tells us this again and again."	Use of Self	8
18	Getting people focused	"[She] kept everyone focused on the end goal."	Regulate the Distress	8
18	Get people on board	"He is very good at rallying the troops, and getting everybody on board and ready to go quickly."	Regulate the Distress	8
18	Create/organize team	"[She] Organized the team to face the challenge in an appropriate manner."	Invite the Stakeholders, Regulate the Distress (indirect effect)	8
18	Collaborative problem solving	"Involving everyone in the decision."	Give the Work Back, Regulate the Distress (indirect effect) Distinguish Between Adaptive and Technical Challenges (indirect effect)	8

Relationship of narrative data codes to the Raei Adaptive Leadership with Authority Scale. Noteworthy from the initial codes is that traditional (technical) approaches to change such as those that emphasize training barely made it to the top 15 list. Also, noteworthy was that providing resources, another technical approach, was ranked at number 10. Importantly, missing from the list are codes that map to Protecting Voices of Leadership without Authority. At no point in the narrative data was there any mention of disagreement, dissenting voices, protecting and covering for people who point to contradiction, and those who name the elephant(s) in the room. Moreover, none of respondents mentioned the boss dealing with positive deviants or creative deviants. Nonetheless, the top initial codes suggest some support for the prescriptions of adaptive leadership where listening, bringing people together, and giving the work back, ranked second, fifth, and sixth place respectively. Moreover, they provide support and shed light on the manifestation of each of the other adaptive leadership with authority elements: Distinguish Between Adaptive and Technical Challenges, Identify the Stakeholders, Create the Holding Environment, Give the Work Back, Regulate the Distress, and Use of Self.

Distinguish Between Adaptive and Technical Challenges. The narratives showed implicit support for Distinguish Between Adaptive and Technical Challenges. The data indicated that the leaders with authority display their understanding of the systemic nature of adaptive challenges, not through oral or written articulation, but through actions; they show that they do not know the answers by inviting others to participate in the solution, creating/organizing the problem solving team, and crossing boundaries to gain a better perspective on the problem. For example, one respondent's shared that their boss,

> would ask [them] to speak with related department managers to get a better idea of what the problem is. He likes [them] to have face to face meetings with other groups, even more than staying in contact via email or by phone. [He] sees this as a way to allow

> instant correction of bad assumptions or oversimplifications that cause problems in the types of solutions we implement in our IS department.

Crossing boundaries in my analysis was different from getting stakeholders' input as the purpose was to gain a larger view of the problem. The limited information from the narrative data, however, did not point to the external stakeholders providing input regarding what the organization should do about the problem. Additionally, the narrative data did not suggest the boss invited the external stakeholders to do the adaptive work.

Identify the Stakeholders. The boss' identification of stakeholders was not discussed as a conscious process from the point of view of the respondents. However, the actions of crossing boundaries, and getting input would not have been possible without it. Instead of the leader identifying the stakeholder's one by one, the most frequent narrative involved the leader generally soliciting everyone's input: "He solicits input from many individuals in different programs and at different levels to see what the challenges and benefits are to new policies." Furthermore, the majority of the responses regarding stakeholders centered on the employees and excluded other stakeholders outside the organization. For example, no respondent mentioned "community members."

Create the Holding Environment. Support for Creating the Holding Environment element was present in the narrative data in the form of bringing people together, creating/organizing a team, getting input, and creating a safe space. For instance, one boss created a safe environment for discussing ideas to face the challenge:

> My company is going through a merger . . . but, [it] has been my boss's biggest challenge by far. The merger of companies was also a merger of people. My boss has successfully created a team where collaboration and acceptance of new ideas flow freely. He knows and tells us that the only bad idea is the one you don't share. We have an integrated team from different companies and I attribute most of it to the fact that my boss has shown great patience and openness to create a team where we are comfortable enough to share good and bad ideas freely.

Giving the Work Back. The narrative data provided support for Giving the Work Back element as it relates to being allowed to make decisions and take responsibility. For instance, one participant commented: "He let us choose what was the best way to deal with the situation." The top codes were: provide direction/vision, give the work back, stay out of the way, and encourage collaborative problem solving. Providing direction/vision is consistent with Laurie's (2000) interpretation of adaptive leadership. Collaborative problem solving is additionally consistent with Create the Holding Environment and Distinguish Between Adaptive and Technical Challenges.

Regulating the Distress. Actions that link with Regulating the Distress were frequently mentioned. Specifically, actions relating to reducing the distress were most common. For example, one participant emphasized the calming aspect of the leader's actions: "My boss is very diplomatic so he is great at calming a heated situation." Another mentioned support: "My company recently changed ownership which came with a lot of changes. Some of these changes were scary to employees. My boss was very supportive to tell us we had nothing to fear." The top codes for Regulate the Distress were: provide idea, provide resources, boundary buffering, get input, provide support, provide solution, encourage, trust, provide accountability, get people on board, and get people focused. All these can contribute to increase and decrease the distress. Interestingly, boundary buffering, getting people on board, encouraging, and providing support were not discussed in the adaptive leadership framework.

Use of Self. There was ample support for the leader's Use of Self generally relating to listening and keeping one's cool. For example, one participant was impressed by their boss's keeping "a level head [and] the fact that he assessed and kept cool under so much stress was impressive and enduring to us all." Other top codes linked with Use of Self were: communicate

about change, role model, persevere, and maintain a positive attitude. While keeping one's cool, listening, role modeling, and persevering were covered in the adaptive leadership framework (Heifetz et al., 2009b), it is noteworthy that, maintaining a positive attitude, while possibly contributing to perseverance and regulating the distress, was not discussed in the adaptive leadership framework. Moreover, as mentioned in Chapter II, Bernstein and Linsky (2016) suggested that some find adaptive leadership lacking in excitement, fun, or inspiration. Having a positive attitude can mitigate some of this deficiency. Additionally, communicating above and below the neck, i.e., communicating to reach people emotionally, spiritually, and intellectually was discussed as part of the framework (Heifetz et al., 2009b). Nevertheless, communicating *about* change was not discussed directly.

Linking scale and narrative data findings. Factor analysis resulted in a unidimensional scale without sub-concept specific identification and the top initial codes from thematic analysis of the narrative questions show that respondents cover six of the seven proposed sub-constructs in their thinking about what the boss contributes to success. The narrative codes, also, provided insights into the potential relationship between the elements of adaptive leadership. They demonstrated the interrelatedness of the elements and support the unidimensional nature of the scale that emerged in this study. It is possible to link Regulate the Distress, Create the Holding Environment, and Give the Work Back. When the boss "asks for the team's opinion[s] and ideas on the challenge, rather than give the idea herself," this not only Gives the Work Back to the team, but can, also, increases the level of distress in the system if the team is accustomed to the boss providing the ideas. Alternatively, it can signal a trust in the team's abilities, thereby reducing the level of distress and Creating the Holding Environment where conflict can take place if need be. Use of Self linked directly with Regulate the Distress and indirectly to Giving

the Work Back. When the boss is the one "thinking outside the box about the changes [that] need to be made and advocates for these changes," Use of Self can contribute to reducing the level of distress in the system, on the one hand. On the other hand, it is the opposite of Giving the Work Back. Adaptive leadership prescribes giving the work back at a rate that the "followers" can handle. Thus, if one is to take a snapshot of an organization, there might be cases where the work, temporarily, is not given back, but the leader can still be considered an adaptive leader. Distinguishing Between Adaptive and Technical Challenges, Identifying the Stakeholders, and Creating a Holding Environment, are also linked in that once a leader recognizes that they are dealing with an adaptive challenge and that they do not possess the answers, it follows that they first Identify the Stakeholders, and then Create the Holding Environment. Finally, there is a link between Regulate the Distress and Create the Holding Environment; when the boss "tells [the followers] that she knows [they] can handle the change and she knows who to assign to help others with the challenge," this show of trust, not only reduces the level of distress, but also strengthens the holding environment. As mentioned in Chapter II, one of the five ways to strengthen the holding environment is through vertical bonds of trust in authority figures and the authority structure.

The prevalence of the codes that link with Regulating the Distress, coupled with the direct and indirect relationships between the Use of Self, Creating a Holding Environment, Giving the Work Back, and Regulating the Distress provide support for the view that adaptive leadership is an intervention framework that focuses on regulating the distress in a social system to bring about adaptive change. Figure 4.4 shows the top narrative codes and how they related to the six adaptive leadership components.

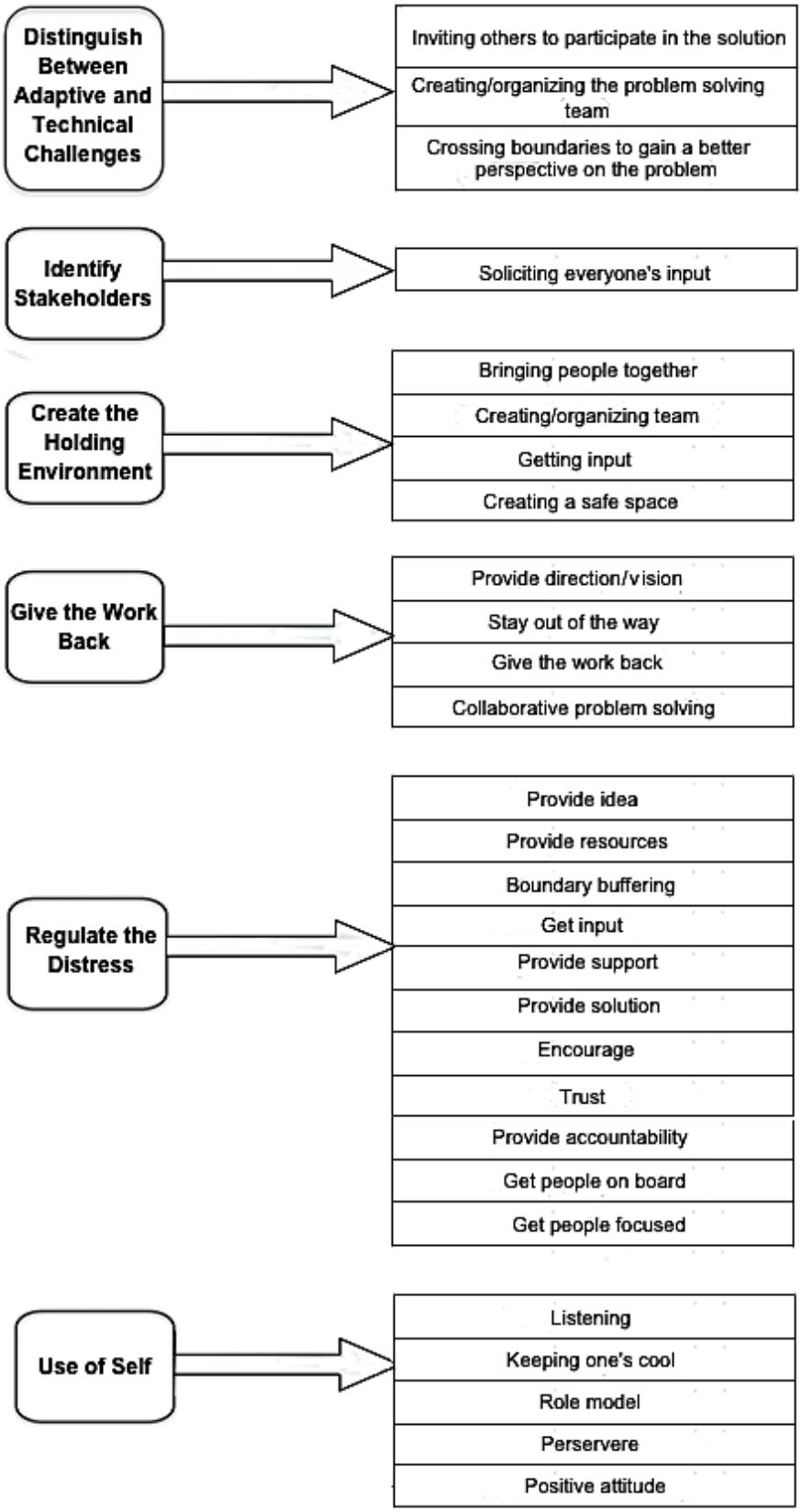


Figure 4.4. Narrative support for Adaptive Leadership with Authority sub-constructs.

Based on the analysis of all 98 codes (Appendix L), the main themes were communicating about change, providing the solution, creating a safe space, getting input, giving the work back, boundary work, and using one's self.

Communicating about change (Table 4.31) involved communicating about the nature of change, communicating about what was happening, providing reassurance, and outlining the benefits of change. Providing the solution included providing the solution, idea, plan, direction, or vision, pushing things through and taking control. Getting input included receiving input on change, welcoming, and inviting ideas. Giving the Work Back involved empowering, getting out of the way, and not providing the answers. Boundary work included boundary buffering and boundary crossing. Finally, use of self-included having a positive attitude, role modeling, acting in a levelheaded manner, and persevering.

Table 4.31

Theme Manifestations

Theme	**Manifestation**
Communicate about change	Communicate about the nature of change, communicate about what was happening; provide reassurance; outline benefits of change
Provide the solution	Provide the solution, idea, plan, direction, vision; push things through; take control
Get input	Receiving input on change, welcome and invite ideas
Give the work back	Empower, get out of the way, and not providing the answers
Boundary work	Boundary buffering and boundary crossing
Use of Self	Have a positive attitude, role model, act in a levelheaded manner, and persevere
Create a safe space	*(manifested as itself)*

In summary, the scale development resulted in a unidimensional scale that covers the seven components of adaptive leadership with authority. Moreover, the narrative analysis provided support for six of the seven adaptive leadership with authority components. Figure 4.5 shows the

results of both with larger hexagons and darker colors indicating a larger prevalence (more items) in the scale, and narrative data, respectively.

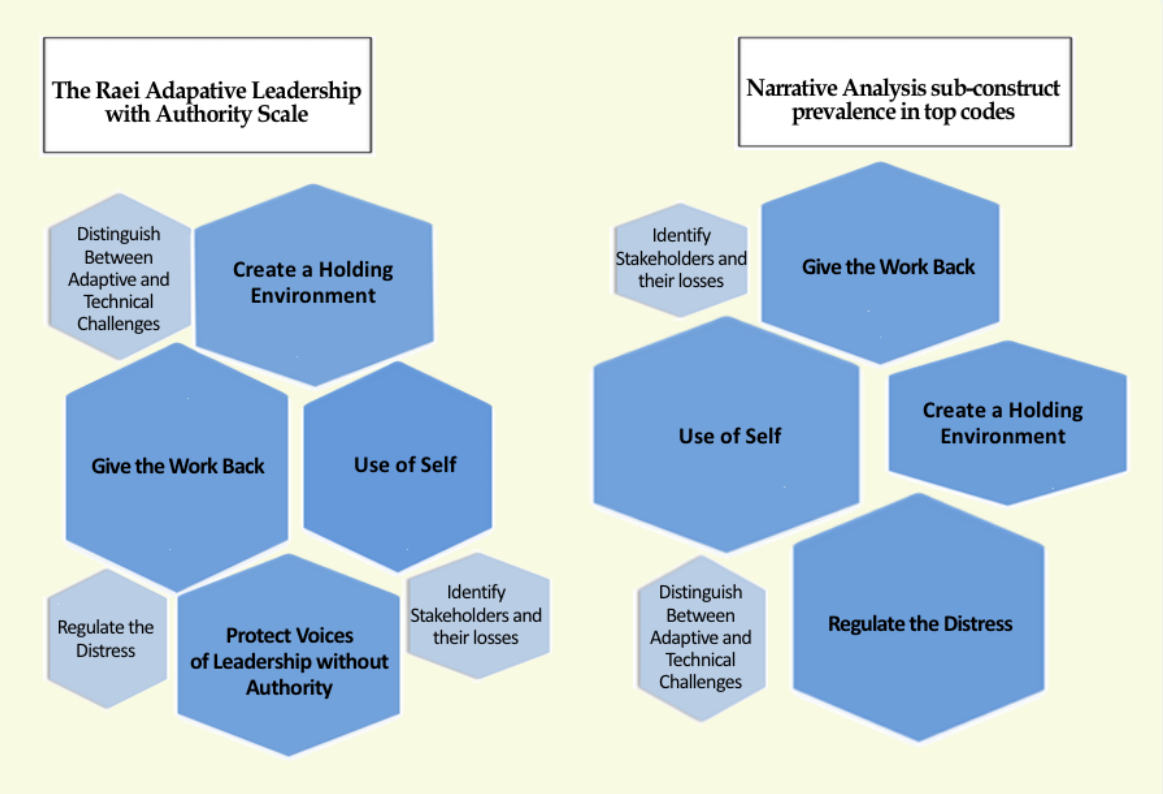


Figure 4.5. Results of the study.

In Chapter V, after providing a full summary, I discuss the implications of the results for research and practice and make recommendations for future research.

Chapter V: Discussion and Recommendations

Today's challenges are complex, often demanding a change in values, habits, or assumptions, and working through conflict. Technical leadership approaches where the boss provides the majority of the answers are not sufficient to tackle these problems. Adaptive leadership provides a framework for tackling these problems where the leader (with authority) identifies the adaptive challenge, identifies the different stakeholders and their losses, brings the stakeholders together in a holding environment, regulates the distress to maintain focus on adaptive work, and uses themselves as a diagnostic and intervention instrument. Additionally, they protect voices of leadership without authority by providing cover to those who raise tough questions and produce stress—individuals who point to the disconnection between what people say and do. The framework has gained wide appeal among practitioners and researchers.

Given the value of adaptive leadership in solving complex organizational and societal challenges, and the fact that adaptive leaders are rare (Heifetz et al., 2009b; TEDxStCharles, 2011), it is crucial that adaptive leadership skills are fostered in leaders. This study developed a scale to measure the degree to which leaders with authority use adaptive leadership. This chapter summarizes the key findings of this study, examines contributions to scholarship, makes recommendations for practice, and discusses considerations for future research and limitations of the study.

Summary of Key Findings and Interpretation

Adaptive leadership is one of the foremost approaches to dealing with complex challenges. A review of extant research revealed the absence of a reliable scale that measures adaptive leadership with authority. Using a seven-component operationalization that captures its essence, I crafted 78 items designed to measure adaptive leadership with authority. After

cleaning and preparing the data, I analyzed 436 responses to the 78 proposed scale items, and nine demographic questions. I used Principal Component Analysis (PCA) and Confirmatory Factor Analysis (CFA) to identify and validate the scale. First, I used PCA with 0.4 loading suppression and varimax rotation as an item reduction technique and identified a 15-item two-component structure as discussed in Chapter IV. Second, I used CFA to evaluate model fit and after some modifications a 14-item two-factor model produced excellent fit. However, the model did not have theoretical support as the two factors were highly correlated. Then, as per Brown's (2015) suggestion, I loaded the items on a one-factor model and evaluated fit for the unidimensional model. After some modifications to improve fit, the final version of the Raei Adaptive Leadership with Authority Scale with 11-items produced a good fit and was, thus, accepted. Reliability was estimated using Cronbach's alpha and the model produced a very good value of .891.

While the scale is unidimensional, it is noteworthy that it covered all seven concepts from the theoretical operationalization. The different elements of adaptive leadership with authority were not separate sub-constructs. The lack of a clear relationship between the items and sub-constructs may be the result of adaptive leadership being a cyclical process without a clear delineation between the different elements. For example, items that are associated with Use of Self (*My boss admits his/her mistakes*) can affect both Creating the Holding Environment and Regulating the Distress. It can also cause stakeholders to accept more losses. Similarly, the item related to Giving the Work Back (*My boss gives people time to learn from their mistakes*) can also contribute to creating a holding environment. Additionally, the items intended to cover Creating the Holding Environment and Inviting the Stakeholders only covered the Creating the Holding Environment element, not the Inviting the Stakeholders element. Inviting the

stakeholders, however, was covered by the missing item **(***My boss reaches out to influential individuals in the organization to help identify the different stakeholders affected by change*) originally targeting Identifying the Stakeholders and Their Losses. While this item does not, explicitly, state that the leader reaches out to the stakeholders to invite them to the holding environment, the leader would not be inquiring about who will be affected by change just for the sake of inquiry. They would only do so, if they intended to invite them for discussions related to how they would be affected by change.

The study also had an opened-ended (qual) question as part of the survey that inquired about the boss's (leader with authority) behaviors that could contribute to adaptive change. I used the open-ended question to contribute to a better understanding of the scale structure and to give insight about the manifestation of the elements that compromise the adaptive leadership with authority framework. The narrative data were not subject to the same eligibility and "complete case" requirement used in the factor analysis. Moreover, there was no requirement to remove cases suspected of being outliers, speeders, or cheaters. Using thematic analysis, I used 550 responses to produce 98 codes. The top codes provided support for six of the seven adaptive leadership elements identified in the scale: Distinguish Between Adaptive and Technical Challenges, Identify the Stakeholders and their Losses, Create the Holding Environment and Invite the Stakeholders, Regulate the Distress, and Use of Self. Missing from the list of top codes are statements related to Protect Voices of Leadership without Authority. This does not mean that this behavior was not present, but rather that respondents might not have noticed it enough to explicitly report it; the respondent might not be aware of the protection provided to voices of leadership without authority because it might be a norm in their organization to the degree that it might become taken for granted. Moreover, the protection might be subtle in the form of not

taking action when dissent is voiced. Thus, the respondent might not take note of it. A strong holding environment would require less protection provided by the leader with authority. Finally, there is the possibility that Protect Voices of Leadership without Authority, while an important part of the overarching adaptive leadership framework, is not part of the adaptive leadership with authority construct; rather, as indicated in Figure 2.1, it is at the interface between adaptive leadership with and without authority—perhaps even acting as a moderator for the latter.

Significantly, the narrative statements related to Identify the Stakeholders showed that if the boss invited everyone to participate, they might not need to consciously identify the different stakeholders one by one. This is probably the case with smaller organizations and teams, where it is easy to just invite everyone. Importantly, the narrative data point to a potential difference between how the Identify the Stakeholders sub-construct plays out in political and societal arenas, on the one hand, and in organizations, on the other hand. In organizations, the main stakeholders who need adapting are the employees. The narrative data did not point to any other stakeholders. However, the stakeholders in the political and societal arenas are much broader and include community members, industry, and politicians. This difference points to a weakness of adaptive leadership conceptualization when the prescriptions are imported, wholesale, from the political and civic leadership (Heifetz & Sinder, 1990) arenas, where they originated, to the organizational arena.

The analysis of all 98 codes showed that communicating about change and boundary buffering are important activities that could be included as part of Regulating the Distress. The qualitative section also provided support for adaptive leadership's emphasis on bringing people together, listening, and giving the work back. Another theme consistent with the framework's

prescriptions was keeping a cool head as part of Use of Self. Finally, as part of Use of Self, the analysis pointed to the importance of having a positive attitude, as contributing to adaptive change.

The combination of the top sub-constructs based on narrative data and top sub-constructs loadings in the scale (Figure 4.5) points to Create the Holding Environment, Use of Self, and Give the Work Back as the most important elements in adaptive leadership with authority. Create the Holding Environment and Give the Work Back involve doing, while Use of Self starts with being. Thus, as I posited in Chapter II, adaptive leadership differs from other leadership frameworks in that it involves an integration of doing and being. Table 5.1 outlines the key findings for the dissertation along with their interpretation.

Table 5.1

Interpretation of Key Findings

Key Finding	**Interpretation**
Adaptive leadership with authority is unidimensional	• Adaptive leadership elements are not separate and they influence each other
The Raei Adaptive Leadership with Authority Scale covers all seven sub-constructs	• Scale provides support for all sub-constructs • Seven sub-construct operationalization is better than 12 sub-construct operationalization which was mostly *unsupported* by the narrative data
Narrative data provided support for six sub-constructs	• Empirical support for six of the adaptive leadership elements
Narrative data did not provide support for Protect Voices of Leadership without Authority	• Protect Voices of Leadership without Authority may not be directly observable by respondents • Protect Voices of leadership without Authority is the *interface* between adaptive leadership with and without authority but is not part of the former as suggested by Figure 2.1
Boss often invited everyone to participate	• If leaders invite everyone, they may not have to worry about identifying specific stakeholders • Prescriptions about adaptive leadership with authority imported from the political realm might not apply in the organizational realm
Create the Holding Environment, Use of Self, and Give the Work Back were the top sub-constructs from narrative data and scale development	• These are the most important elements in adaptive leadership with authority • Adaptive leadership integrates doing and being

Contribution to Scholarship

Quantitative research on adaptive leadership with authority has been lacking because of the absence of a scale to measure it. After establishing conceptual distinctness of adaptive leadership, this dissertation makes available a reliable scale that measures adaptive leadership with authority. Adaptive leadership has only recently gained recognition in mainstream leadership textbooks (Northouse, 2015), and the availability of a scale is likely to propel the research forward. Additionally, it will allow for empirical testing of discriminant validity with other leadership constructs, such as authentic leadership (Avolio & Gardner, 2005) and transformational leadership (Bass, 1985; Burns, 1978).

This study is significant in that it showed that the components of adaptive leadership are not separate sub-constructs. Instead, they are linked together and exert influence on each other as discussed in Chapter IV. For example, Distinguishing Between Adaptive and Technical Challenges, Identifying the Stakeholders, and Creating a Holding Environment influence each other both directly and indirectly.

The results of the open-ended question provide empirical support for six of the seven adaptive leadership with authority conceptualizations, something that was lacking in the scholarship. Furthermore, the narrative did not lend support to the twelve-element conceptualization used by Conrad (2013) which translated the elements of adaptive leadership as outlined in *The Practice of Adaptive Leadership* (Heifetz et al., 2009b) directly into statements, without considering whether this conceptualization captured the essence of the phenomenon in question. Specifically, the narrative data did not cover the following elements: know your defaults, know your role in the system, know your purpose, think systemically, use interpretations experimentally, own your part of the mess, orchestrate conflict, stay in the

game-stay alive, act politically, and think politically. In fact, the only two elements that had support were willingness to exceed one's authority and distinguish adaptive and technical challenges.

Significantly, as predicted by the framework, a few technical actions contribute to the success of adaptive change. However, the majority (78.57% of top codes) of actions were adaptive. This suggests that adaptive and technical leadership are not opposites. If the two were opposites, the actions would not include any technical behaviors. The narrative data, additionally, pointed to elements not covered by Conrad's (2013) scale that were conducive to adaptive change. Specifically, the narrative data pointed to boundary buffering, and communicating *about* change as such activities. Finally, the narrative responses had a prevalence of actions that contributed to reducing the distress, indicating that in today's high-pressure work environment there is a larger need to reduce the distress instead of adding more pressure.

Implications for Leading Change

While the prescriptions of the adaptive leadership framework are legion (Northouse, 2015), the thematic analysis provides additional prescriptions that might help leaders dealing with adaptive change. Kotter (1996) argued that leaders of change under-communicate the vision for change by a factor of 10. Moreover, Kotter emphasized communication that captures the minds and hearts of individuals in the organization. Similarly, Heifetz et al. (2009b) discussed communicating above and below the neck—that is, communicating to reach people emotionally, spiritually, and intellectually as part of the framework. The narrative analysis suggests that the simple act of keeping employees informed about change plays a major role in helping with adaptive change as it reduces the level of distress. Additionally, the analysis provides details about what the communication about change covers: communicating about the nature of change,

communicating about what was happening, providing reassurance, and outlining the benefits of change. Thus, leaders should not assume that individuals in their organization are well informed about the nature of change nor that they do not need reassurance. Scholarship on leadership communication has focused on general leadership communication (e.g., Gaines, 2010) and has neglected the communication needed for leading change. With the increasing rate of change and the plethora of adaptive challenges facing organizations today, I would argue that any discussion about communication in leadership becomes less relevant without including leading change as part of the scholarly conversation about leadership communication.

Bernstein and Linsky (2016) suggested that some find adaptive leadership lacking in excitement, fun, or inspiration. Having a positive attitude, "always see[ing] the brighter side of every situation" (Mohanty, 2012, p. 259) can help in adaptive work. Emotional contagion is the propensity to mechanically imitate and coordinate facial expressions, and movements with those of another person's and to harmonize emotionally (Hatfield, Cacioppo, & Rapson, 1994, as cited in Hatfield, Bensman, Thornton, & Rapson, 2014). For example, if the boss appears to be calm or happy, others might start feeling the same and thus it might reduce the distress level through emotional contagion. Additionally, a leader's positive attitude can contribute to their ability to "hold steady in the heat of action" (Heifetz & Linsky, 2002, p. 141). If the leader is optimistic, they are less likely to give up in the face of adversity. Whereas, if they viewed the situation as hopeless, then they are less likely to persevere.

Boundary buffering—protection from external demands from upper management—might reduce the level of distress in the system, contribute to strengthening the holding environment as trust in the boss increases, and allow for slack "which gives team members an opportunity for quiet reflection within the team" (Dey & Ganesh, 2017, p. 281).

Upper-level managers, often, are the ones who dictate what teams and organizational units have to do. Mid-level managers and team leaders, on the other hand, are the ones who buffer against those demands. The boundary work identified in the responses appears in the context of team leaders and mid-level managers. In contrast, the boundary work discussed by Williams (2015) is mostly in the context of top-level political leadership and did not cover boundary buffering.

Shorter scales are good because they reduce the burden on respondents. Longer scales are good because they tend to be more reliable (DeVellis, 2017). Shorter scales, additionally, decrease survey drop off rate (Chudoba, n.d.), thereby improving the generalizability of the results. Not only is the 11-item the Raei Adaptive Leadership with Authority Scale highly reliable but also it can be completed in less than three minutes. Thus, administration in any organization would not use a significant portion of the time allocated to training. Moreover, the scale is suitable for multiple levels in the organization. When used at the start of a change effort, the scale can serve as a diagnostic tool for adaptive leadership and organization development interventions. If the level of adaptive leadership is high, then training might not be warranted. If the level of adaptive leadership is low, it can be used in before and after evaluation of adaptive leadership training to determine overall effectiveness of the training. Also, it can be used to determine the areas where the training was not effective and make modifications to the training program. Finally, it can identify individual leaders with authority who might be in need of additional training or adaptive leadership coaching.

The qualitative research points to four potential areas of intervention that can be used for adaptive work: Communicating about change, boundary work (for mid-level managers and team leaders), listening skills, and Use of Self. Organization development practitioners can focus their interventions on increasing communication about change and listening skills for leaders. As

mentioned earlier communicating about change involves communicating about the nature of change, what is happening, providing reassurance, and outlining benefits of change. The leader would have to build enough trust so that the employees would take their reassurances seriously. Moreover, when outlining the benefits of change, leaders have to think beyond the benefits to the organization and be able to take the perspective of the employees.

Organizations can increase boundary crossing (spanning)—reaching out into the external "environment to obtain important resources and support" (Faraj & Yan, 2009, p. 606)—through reward structures. However, boundary buffering—safeguarding the department or team from external uncertainties and disruptions (Scott, 1998)—listening, and Use of Self are adaptive skills and are not likely to benefit from rewards. Still, adaptive skills, often, include a technical component. Thus, leaders can help organizations create the structures that allow mid-level managers and team leaders to buffer their teams and direct reports from external demands. For example, they can help with the selection and design of 360-degree feedback in a manner that would encourage boundary buffering. As for the adaptive component, the ability of the team leaders and mid-level managers to say "no" to their own bosses and buffer direct reports and teams from external demands would entail a high level of mental complexity. If the mid-level manager or team leader is generally reluctant to say "no," then interventions such as the immunity to change program (Kegan & Lahey, 2009)—an intervention whereby participants explore and gradually change a subconscious assumption and worldview that had hitherto limited their actions and prevented change—might be in order. An immunity to change intervention might also help leaders listen if they genuinely profess a commitment to listening, while doing the opposite. Otherwise, coaching and training on listening would enhance listening skills.

Finally, emotional intelligence training—training to increase "the ability to monitor one's own and others' feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions" (Salovey & Mayer, 1990*,* p. 189)—might be helpful in increasing the ability of change leaders to keeping a cool head and maintaining a positive attitude. Given the popularity of emotional intelligence in recent years, it is likely that many large organizations have it as part of their leadership development curriculum.

The open-ended question also pointed to a significant percentage of cases (12.72%) where the boss provided the solution, idea, plan, direction, and vision and pushed things through. In Chapter II, I argued that the adaptive leader needs to have an adequate level of skill to be able to deal with the technical component of an adaptive challenge and to take off some of the technical work from direct reports when needed, to reduce the level of distress. The fact that in approximately 13% of narrative responses, the boss provided the solution offers tentative support for this proposition; leaders need to be able to provide solutions if needed.

The combination of the narrative and scale data points to the areas where leaders and leadership development practitioners should expend the most energy in creating adaptive change: Create the Holding Environment, Use of Self, and Give the Work Back. These facets are often neglected in change efforts (e.g., Kotter, 1996; Lewin, 1947) and given their importance should receive greater attention. Table 5.2 provides a summary of the implications for leading change.

Table 5.2

Implications for Leading Change

Results of the study	**Implications for leading change**
Top code: Communicate about change	• Leaders should constantly communicate about change and not assume that employees are well informed. • Leaders have to build trust. • Leaders should think about benefits to the employees and not just the organization.
Top code: Have a positive attitude	• Leaders should keep a high level of optimism as it allows them to persevere in the face of adversity. • Leaders' positive attitude can reduce the distress through emotional contagion. • Emotional intelligence training can improve attitude.
Top code: Boundary buffering	• Increase the ability of mid-managers and team leaders to boundary buffer through including boundary buffering in 360-degree evaluation. • Use the immunity to change exercise as an intervention to help leaders say "no" to their own superiors.
Code: Boundary crossing	• Boundary crossing can be improved through reward structures.
Top theme: Listen	• Listening skills need to be improved in organizations. • Immunity to change and listening skills training are two interventions pertinent to listening skills.
Code: Keep a cool head	• Emotional intelligence can improve this skill.
Short scale available to measure adaptive leadership with authority	• Scale will not take time away from training. • Training can be evaluated for its effectiveness. • Individuals can be selected for adaptive leadership development.
Create the Holding Environment, Use of Self, and Give the Work Back as top sub-constructs from narrative data and scale	• Prime areas for intervention.
~13% of responses involved leader providing the solution	• Leaders need to be able to provide solutions if needed. • Adaptive and technical leadership are not opposites.

Future Research

The majority of the sample was from Mechanical Turk respondents (92.7%). As I mentioned in Chapter III, Mechanical Turk samples are no different than other convenience samples. Because of the small number of the respondents from snowball sampling, I could not ascertain if there were any true differences between the two groups. Future research could look into the existence of difference and/or limitations of Mechanical Turk samples, if any.

There was a very small percentage (1.1%) of respondents residing in Canada. Thus, I was not able to determine if there are any difference between the United States and Canadian respondents. Research in the future can obtain a larger Canadian sample and determine if there are any differences between the two populations.

The scale items were designed with a North American audience in mind. Future research can validate the scale in other English-speaking countries. Moreover, once full validation is complete, the scale can be translated to other languages and validation of the translated scale can be obtained. Future studies might remove items that may not be appropriate to the implementation of adaptive leadership in other cultures. For example, Chinese employees generally resist efforts to empower them following the approach in Western schools of management. They reason that the leader should be able to find the solution on their own and should not attempt to increase their level of responsibility for direct reports (Gallo, 2011). Therefore, the item "*my boss is willing to give up some of his/her authority*" might not be appropriate in a Chinese context and might have to be removed.

The qualitative question asked respondents about what boss behaviors helped with change in values, assumptions, or habits. Since these are lumped together under adaptive change, future studies could have a more specific approach and focus on each kind of change separately.

For example, what behaviors are conducive to change in values? Are they different from the ones dealing with change in habits? Which practices apply to all three kinds? Additionally, assuming a difference, future research can inquire about the order in which each of these should be tackled and which ones are more important?

The opened-ended question asked about change in values, assumptions, or habits, since the respondents often did not provide information about the specific change effort, it is possible that the change was not entirely adaptive. Future research might be undertaken to confirm the adaptive nature of change before considering the answers. Adaptive leadership scholarship has focused on challenges that are mostly adaptive and assumed that since technical problems have existing solutions, there is no need to deal with the technical aspects in the scholarship. Future research can look into the kinds of technical skills that are demanded of adaptive leaders to deal with the technical aspects of an adaptive challenge. These might differ from expertise as depicted in adaptive leadership in that while they are technical in nature, they might not exist within the existing repertoire of the leader or an external expert. For example, putting a person on the moon required the creation of technical skills that did not exist anywhere when the project started.

The responses to the opened-ended question were limited by space and completion time. Mechanical Turk respondents want to complete each survey as fast as possible and provide very concise answers. For example, the respondents cited having a positive attitude as conducive to adaptive change but did not elaborate on what that meant. Researchers could employ interviews to gain deeper understanding of what having a positive attitude meant to them. Alternatively, using comparative and regression analysis and a larger sample, they could match specific practices to specific leader level in the organization and specific industries.

While the scale has demonstrated validity and reliability, future research could provide further validation when tested with different population groups. Moreover, research can empirically test discriminant validity in relation to transformational leadership. Additionally, since some of the scale items and answers from opened ended questions point to the importance of creating a safe environment, future studies can look into the relationship between psychological safety (Edmondson, 1999) and adaptive leadership both in terms of discriminant validity, and as a potential mediator or moderator of adaptive leadership with authority and its outcomes. It is worth noting that the statements related to creating the holding environment could have primed the respondents to include creating a safe space in their response to the open-ended question. Research in the future might ask the same question on its own or at the start of the survey to mitigate any concerns related to priming—the activation of varied mental constructs unconscious to individuals through perception of extraneous stimuli (Bargh & Chartrand, 2000). In addition to psychological safety as a potential mediator or moderator, future research can look into mediators, moderators, and various outcomes of adaptive leadership with authority, such as innovation, profitability, employee satisfaction, and environmental dynamism.

Due to the influence of upper echelon theory (Hambrick & Mason, 1984), the scholarship on leading change has focused on top-level managers. The vast majority of the aspects of adaptive leadership represented in the scale can be exercised by team leaders, middle managers, and top-level managers. In other words, the conceptualization applies well, regardless of the level of boss in the organization. However, as suggested in Chapter II, the level of the boss in the organization dictates the degree to which they control the holding environment with top-level managers having more control. The boss's ability to reach out to influential individuals in the organization to help identify the different stakeholders affected by change (item 5G) might be

somewhat limited at lower levels of the organization. Future research might look into differences in scores for this item depending on the level of the boss in the organization using a much larger sample.

The unidimensional structure of the scale has some support from Fowler's (2013) study where all the scale items for the boss loaded on one factor and the scale did not produce a five-factor structure. Still, future research could focus on confirming the unidimensional structure of the construct. It is possible that structure is a product of the items used and other items, using the same operationalization, might produce a different structure.

The scale items asked about the boss's behaviors to avoid any issues related to self-report bias. Additionally, the specific items selected were the ones that were most apparent to the respondents. For example, in the case of Use of Self, I did not ask the respondents if the boss had any confidants, employed a personal practice, or alternated between going to the balcony and the dance floor, as they are not likely to be privy to that information. There are only two items in the adaptive leadership with authority scale that focus on Use of Self. To complement the scale, a self-assessment or scale to measure Use of Self as it would be experienced from the first person's point of view can be developed. The use of both scales would produce a more holistic picture of adaptive leadership in an organization and can make training more effective. It might be also helpful with regard to confirming the hypothesis that adaptive leadership demands a higher level of mental complexity; many of the aspects demanding a higher level of mental complexity are covered under Use of Self. For example, the scale would have at least one item covering making interpretations experimentally, which can be linked with higher mental complexity because the boss would have to let go of their personal ideology.

The Raei Adaptive Leadership with Authority Scale measures adaptive leadership with authority. Adaptive leadership with authority interacts and allows leadership without authority to flourish in an organization. Future research can look into the development of a scale to measure adaptive leadership without authority. Moreover, once the scale is developed, one can assess if adaptive leadership without authority is a mediator, moderator, or outcome of adaptive leadership with authority.

One of the key themes in the answers to the open-ended question was listening. The answers did not reveal whether this was a deeper listening that uncovered "the song beneath the words" as advocated by the adaptive leadership literature (Heifetz & Linsky, 2002; Heifetz et al., 2009a, 2009b), or a more general listening. In a related vein, Wolvin (2010) suggested that leaders' listening should be active and not passive. For example, in active listening, the leader would ask clarifying questions and/or repeat what the speaker said to confirm that they understood the content. In contrast, in passive listening, they might either shake their head in acknowledgment or just do nothing. The answers to the open-ended question did not reveal the nature of the listening. Future research can investigate the depth of listening and whether it was active or passive.

Earlier in this chapter, I argued that the narrative data did not provide support for the Protect Voices of Leadership without Authority sub-construct because the behavior might have become a norm in their organization. Using interviews and observations of meetings, researchers can look to confirm the presence of this behavior.

Finally, for the purpose of factor analysis, I removed all the reverse scored items as they loaded together and did not load on their respective sub-constructs (Baron, 2018). In Chapter II, I pointed to the fact that Conrad (2013) created a technical leadership scale that did not relate with

Heifetz's conceptualization. Future research can use some of the reverse scored items that were removed as part of a measure for technical leadership.

Limitations

This study had several limitations related to the portion of the sample used in the factor analysis. First, African Americans and Latinos were underrepresented in the study compared with their percentage in the general population. Second, the percentage of the sample with a Bachelor's or advanced degree was higher (44% and 19.3%, respectively) than in the general population (Ryan & Bauman, 2016). Third, respondents younger than 25 years old, or those who did not finish high school, employees from startups, and/or organizations with less than 10 employees were excluded from the factor analysis. The underrepresentation or overrepresentations of certain demographic characteristics might influence the generalizability of the results.

Concluding Remarks

One of the key lessons from conducting this research is that things do not always produce the results that one expects. I had thought of the different elements of adaptive leadership as highly related, and expected the scale, perhaps, to have five dimensions. The fact that I ended with a unidimensional scale was somewhat surprising as I expected a majority of the items to load to their respective subcomponents.

The opened-ended question provided valuable insights, not just to adaptive leadership but to my understanding of change in general. As I analyzed the results, I realized that even though defining adaptive change as a change in values, assumptions, or habits is helpful from a practitioner point of view, it might be too broad as a conceptualization to make it useful for researchers and theoreticians.

Scale development is both an art and a science. Even after I distributed the scale items for content validation, I continued to identify new items that I wished I had included. In the final analysis, I had to accept that it might not be possible to come up with a "perfect" scale.

Scale development and validation are ongoing processes. My goal was to create a valid and reliable scale. Considering that adaptive leadership is an evolving framework, I have created the foundation on which future quantitative research can be built. Due to the multitude of problems facing society and organizations, the world needs adaptive leadership more than ever.

Appendices

Appendix A: Expert Panel Bios

Cheryl Getz, Ed.D.

Associate Professor and the Director of Leadership Minor in the Department of Leadership Studies at University of San Diego. Her research interests include 1) using action research methodology to enhance the teaching of leadership; 2) the exploration of college student social identity; 3) the application of group relations theory to higher education administration and student affairs; 4) the development of inclusive and integrated leadership development; and 5) strengthening cultural competence through international travel and exchanges. She has held a variety of administrative positions in the School of Leadership and Education Sciences, including Associate Dean, Director of Graduate and Credential Programs, Assistant Dean and Chair. She teaches courses for master's and doctoral students in the Higher Education Leadership Program, while teaching an undergraduate course in the leadership minor. She supervises Student Affairs graduate interns and teaches the accompanying seminar.

Linda Klonsky, PhD.

Chair of the Business Psychology/Organizational Leadership Department at The Chicago School for Professional Psychology, DC campus, received her doctorate in Human and Organizational Systems from Fielding Graduate University. Linda is also a Johns Hopkins Fellow in Change Management and completed the Leadership Educators Program at the John F. Kennedy School of Government, Harvard University.

In addition to her role in academia, Linda has over 20 years of experience as an Organization Development consultant, where she has focused on organizational assessments, strategic planning, leadership training, team building and non-profit board governance.

Tim O'Brien, Ed.D.

Lecturer in Public Policy at the Harvard Kennedy School. He is Faculty Chair of the Leadership for the 21st Century program (L21). Tim's research interests focus on the complex challenges people hope to address, the understanding they bring, and the meaning-making they need to address those challenges. This lens on leadership development emphasizes self, group and organizational awareness over content and skills. How to develop and cultivate that self-awareness is the primary concern of Tim's research. His teaching methods are experiential, collaborative and reflective in nature and help participants develop the insight and inquiry they need to meet the demands of the challenges they face.

In addition to the L21 program and his degree courses, Tim directs leadership development programs and workshops for state government, multinationals, non-profits and foundations. In this work he helps leaders orchestrate systemic interventions and overcome powerful status quos that resist learning, innovation, and adaptation. His teaching, training, coaching and consultancy practice is built on the fundamentals of his research—that all people and organizations can learn and develop with the right balance of supports and challenges. He also speaks on the challenges of developing leadership capacity alongside management skills. Before his appointment at HKS, Tim was a leadership consultant for INSEAD Business School's Management Acceleration Program and faculty for the Harvard Graduate School of Education's Programs in Professional Education. Tim holds a B.S. from NYU and an Ed.M and Ed.D from the Harvard Graduate School of Education in Human Development and Education. He is a member of The Academy of Management and The A.K. Rice Institute for the Study of Social Systems. He earned his 100-ton captains license directing sail-training programs aboard traditionally-rigged wooden schooners in the Atlantic and Caribbean.

Tayo Switzer, PhD.

Tayo has been working as an organization development professional for nearly 20 years. He has worked for two fortune 500 companies, Limited Brands and Cardinal Health, as a human resources professional and organization development consultant. He is currently with The Ohio State University as an organization and leadership effectiveness consultant, and coach, working with leaders and leadership teams to increase their effectiveness. Tayo received his undergraduate degree from The Ohio State University, his master's degree in Organization Development from University, and his PhD in Leadership and Change from Antioch University. He is also married and has two children.

Appendix B: Expert Panel Content Validity

Introduction

Greetings,

You are being asked to fill out this content validity survey because of your expertise in adaptive leadership as originally defined by Ronald Heifetz. As indicated in an earlier e-mail communication, I'm creating a scale to measure adaptive leadership with authority. To start, I've designed a survey that includes questions about seven aspects of adaptive leadership based on my reading and understanding of the literature. Following content validation, I will send out a pilot survey to make sure that items are understandable to the target population. After final administration of this survey, responses will be analyzed using factor analysis and that will lead to the final Adaptive Leadership with Authority Scale.

Definition of construct in the literature

Based on my reading of the literature, I defined adaptive leadership as follows:

Adaptive Leadership: Leadership that helps groups, departments, and organizations face hard problems–problems that require a change in habits, values, or assumptions; change that often requires prolonged learning and experimentation. Because these problems are tough, and might need people to change their values/habits/ assumptions, trying to deal with these problems can sometimes result in resistance and conflict.

Adaptive Leadership with Authority: Adaptive leadership as exercised from a position of power.

Operationalization: I have also identified the following as the key principles in adaptive leader:

1. Distinguish between adaptive and technical problems.
2. Identify the stakeholders and their potential losses.
3. Create a holding environment and bring the stakeholders to do the adaptive work.
4. Regulate the distress.
5. Give the work back.
6. Make use of one's self.
7. Protect voices of leadership without authority.

Instructions:

Please examine each statement (starting on the next page) for how strongly it relates to the aspect of Adaptive Leadership with Authority the statements are intended to measure. The rating options are Poorly Related, Moderately Related, and Strongly Related. In addition, if you have suggested modifications for the statements, or think it might better represent another part of the construct, please specify your thoughts in the comment box below the question. Also, please feel free to suggest additional items to represent the construct/sub-construct. Finally, if you feel that I have left out some key elements of adaptive leadership in my definition, please let me know which ones and

explain your reasoning.

All statement below are in relationship to the survey respondent's boss. Boss here is defined as the person who the respondent directly reports to. I am expecting this process to take approximately 60 minutes of your time. Time is valuable and I really appreciate the time you are taking to help advance scholarship on a crucial topic. Please let me know if you have any questions.

Thank you.

Mo Raei

Step 1. Distinguish adaptive and technical challenges

In this step the boss determines whether the problem is adaptive or technical. Adaptive problems are systemic, require change in habits, values, beliefs, or assumptions, and demand learning and experimentation. Technical problems can be fixed with technical means; for example, installing a new app/pay system, issuing an order or a mandate, etc, would solve the problem. In the technical case, the solution is within the existing capabilities of the group, department or organization; the organization has the staff to implement the solution, or can hire someone with the knowledge to do it.

1. Please indicate your thoughts on how strongly each of the following statements relates to distinguishing adaptive and technical challenges.

	Poorly related	Moderately related	Strongly related
a) My boss recognizes that our challenges are complex.	○	○	○
b) My boss thinks getting rid of some people would solve our problems (reverse scored).	○	○	○
c) My boss focuses on the big picture.	○	○	○
d) My boss likes to be constantly fighting fires (reverse scored).	○	○	○
e) My boss recognizes that we have to leave some of our old ways behind.	○	○	○
f) My boss recognizes that there is no quick fix for our biggest challenges.	○	○	○

	Poorly related	Moderately related	Strongly related
g) My boss thinks that technology can solve most of our problems (reverse scored).	○	○	○
h) My boss recognizes that change can be frustrating.	○	○	○
i) My boss sees how a problem in one part of the organization (department) can affect the rest of the organization(department).	○	○	○
j) My boss recognizes that change might require sacrifices.	○	○	○

Please indicate if any of the items above are not clear or confusing. Furthermore, provide any suggestions for wording/format improvement. Finally, please indicate if the sub construct of distinguishing adaptive and technical challenges has not been adequately covered with the items, or if you think any of the items needs to be moved to another section..

Step 1. (continued) Distinguish adaptive and technical challenges

In this step the boss determines whether the problem is adaptive or technical. Adaptive problems are systemic, require change in habits, values, beliefs, or assumptions, and demand learning and experimentation. Technical problems can be fixed with technical means; for example, installing a new app/pay system, issuing an order or a mandate, etc, would solve the problem. In the technical case, the solution is within the existing capabilities of the group, department or organization; the organization has the staff to implement the solution, or can hire someone with the knowledge to do it.

2. Please indicate your thoughts on how strongly each of the following statements relates to distinguishing adaptive and technical challenges.

	Poorly related	Moderately related	Strongly related
a) My boss acts as if he/she can solve most our problems (reverse scored).	○	○	○
b) My boss encourages us to focus on the long term, as well as the short term.	○	○	○
c) My boss thinks if we just had more money, most of our problems could be solved (reverse scored).	○	○	○
d) My boss communicates that to overcome our biggest challenges, we might have to change our priorities.	○	○	○
e) My boss focuses on the wrong problem (reverse scored).	○	○	○
f) My boss communicates that others can contribute to finding solutions.	○	○	○
g) My boss knows that the problem might be in the system, not with any one individual.	○	○	○

Please indicate if any of the items above are not clear or confusing. Furthermore, provide any suggestions for wording/format improvement. Finally, please indicate if the sub construct of distinguishing adaptive and technical challenges has not been adequately covered with the items, or if any of the items needs to be moved to another section.

Step 2. Identify stakeholders and their potential losses

In this step, the boss identifies the different people and groups that might be affected by the change. Moreover, the leader determines to what degree the change would affect the stakeholders negatively and what they might stand to lose through the process.

3. Please indicate your thoughts on how strongly each of the following statements relates to your boss's ability to identify stakeholders and how they will be affected.

	Poorly related	Moderately related	Strongly related
a) When there is a change to our work or processes, my boss tries to find out how we will be affected.	○	○	○
b) My boss reaches out to opinion leaders in the organization to help identify the different stakeholders.	○	○	○
c) When dealing with tough problems my boss goes it alone (reverse scored).	○	○	○
d) My boss tries to find out who will be affected by change (to processes, ways of doing work, etc).	○	○	○
e) My boss sees the benefits of change, but not the downsides (reverse scored).	○	○	○
f) When dealing with (organizational or departmental) challenges, my boss asks who else needs to be involved.	○	○	○
g) My boss tries to understand why people might resist change.	○	○	○

Please indicate if any of the items above are not clear or confusing. Furthermore, provide any suggestions for wording/format improvement. Finally, please indicate if the sub-construct of identify stakeholders and their potential losses has not been adequately covered with the items, or if any of the items needs to be moved to another section.

Step 3. Create a holding environment and bring the stakeholders to do the adaptive work

In this step, the boss brings the different people who need to work on the challenge together. Moreover, they create a space for people to discuss and workout differences in ideas and be able to engage in conflict to arrive at the eventual "solution."

4. Please indicate your thoughts on how strongly each of the following statements relates to your boss's ability to create a holding environment and bring stakeholders to do the adaptive work.

	Poorly related	Moderately related	Strongly related
a) My boss creates a space where it is safe to discuss what everyone knows but may be afraid to bring out into the open.	○	○	○
b) My boss attacks any criticism of their ideas (reverse scored).	○	○	○
c) My boss creates a sufficiently comfortable environment in which we can air our concerns, share our ideas, and discuss our differences.	○	○	○
d) My boss encourages us to tell him/her if we think that we are going in the wrong direction.	○	○	○
e) My boss creates an environment where we can have conflict about our ideas without getting personally attacked.	○	○	○
f) My boss brings those who need to be involved to work on our challenges.	○	○	○
g) My boss censors me (reverse scored).	○	○	○
h) My boss makes us fear bringing up bad news (reverse scored).	○	○	○
i) Creates a space where I feel safe when I point to a contradiction between what we say we do and what we actually do.	○	○	○
j) My boss invites everyone who needs to be here for the tough discussions.	○	○	○

	Poorly related	Moderately related	Strongly related
k) My boss allows us to occasionally act as devil's advocates.	◯	◯	◯
l) When someone disagrees with the rest of the group, my boss lets us attack them (reverse scored).	◯	◯	◯

Please indicate if any of the items above are not clear or confusing. Furthermore, provide any suggestions for wording/format improvement. Finally, please indicate if the sub-construct of creating a holding environment and bringing the stakeholders to do the adaptive work has not been adequately covered with the items, or if any of the items needs to be moved to another section.

Step 4. Regulate the distress

In this step, the boss prevents conflict and stress from blowing up. At the same time, they keep a level of urgency and focus on the important issues.

5. Please indicate your thoughts on how strongly each of the following statements relates to your boss's ability to regulate distress.

	Poorly related	Moderately related	Strongly related
a) When we are trying to avoid the real issues, my boss brings us back to the real problem.	◯	◯	◯
b) My boss creates an environment where everything is urgent (reverse scored).	◯	◯	◯
c) When we are too distressed, my boss helps to reduce the tension by taking work off our plate.	◯	◯	◯
d) My boss knows when to bring up an important issue, and when to hold off.	◯	◯	◯

	Poorly related	Moderately related	Strongly related
e) My boss helps us prioritize dealing with the different challenges.	○	○	○
f) When my boss leads a meeting, getting through the agenda items is more important than dealing with how people are feeling.(reverse scored).	○	○	○
g) My boss might hold off on giving us bad news if he/she knows the timing is bad.	○	○	○
h) When our values seem to get in the way of work, my boss challenges them.	○	○	○
i) My boss expects all the changes to happen at the same time (reverse scored).	○	○	○
j) My boss prevents us from getting too distracted by immediate but unimportant concerns.	○	○	○
k) My boss can read the room during meetings.	○	○	○
l) My boss prevents us from becoming complacent.	○	○	○

Please indicate if any of the items above are not clear or confusing. Furthermore, provide any suggestions for wording/format improvement. Finally, please indicate if the sub-construct of regulating the distress has not been adequately covered with the items, or if any of the items needs to be moved to another section.

Step 5. Give the work back at a rate people can handle

In this step, the boss puts some pressure on the people with the problem; the leader moves the responsibility for the work to the front lines and makes sure that he gives back ownership, and responsibility to individuals and groups at a speed they can handle.

6. Please indicate your thoughts on how strongly each of the following statements relates to your boss's ability to give the work back at a rate people can handle.

	Poorly related	Moderately related	Strongly related
a) When there is conflict in our group, my boss only gets involved if it looks like things will get out of hand.	◯	◯	◯
b) When my boss lacks the solution, they answer my question with a question.	◯	◯	◯
c) My boss likes to play the hero and save the day (reverse scored).	◯	◯	◯
d) My boss makes me feel free to take responsibility.	◯	◯	◯
e) My boss does not clean up our messes for us.	◯	◯	◯
f) My boss pushes us to a breaking point (reverse scored).	◯	◯	◯
g) My boss encourages us to have our own opinions.	◯	◯	◯
h) My boss does not do work for me that I need to do for myself.	◯	◯	◯
i) My boss gives people time to learn from their mistakes.	◯	◯	◯
j) My boss has to be involved in every problem (reverse scored).	◯	◯	◯
k) My boss is a good judge of how much we can handle.	◯	◯	◯

Please indicate if any of the items above are not clear or confusing. Furthermore, provide any suggestions for wording/format improvement. Finally, please indicate if the sub-construct of giving the work back at a rate people can handle has not been adequately

covered with the items, or if any of the items needs to be moved to another section.

Step 6. Use of self

In this step, the boss knows their limitations and their influence on other people. The leader has high self-awareness and uses it in service to the change process. Also, the leader uses this awareness to prevent themselves from getting derailed.

7. Please indicate your thoughts on how strongly each of the following statements relates to your boss's ability to use a good sense of self.

	Poorly related	Moderately related	Strongly related
a) When there is a problem, my boss immediately jumps into action (reverse scored).	○	○	○
b) My boss listens well before talking.	○	○	○
c) My boss is a control freak (reverse scored).	○	○	○
d) My boss is clueless about how he/she comes off (reverse scored).	○	○	○
e) To get people to focus on the main problem, my boss tries something, and if it doesn't work, tries something else.	○	○	○
f) My boss takes things personally (reverse scored).	○	○	○
g) My boss admits his/her mistakes.	○	○	○
h) My boss lets their personal issues get in the way of their work (reverse scored).	○	○	○
i) When things hit the fan, my boss can keep their cool.	○	○	○
j) My boss recognizes the impact of their mood and actions on others.	○	○	○

Please indicate if any of the items above are not clear or confusing. Furthermore, provide any suggestions for wording/format improvement. Finally, please indicate if the sub-construct of use of self has not been adequately covered with the items, or if any of the items needs to be moved to another section.

Step 6. (continued) Use of self

In this step, the boss knows their limitations and their influence on other people. The leader has high self-awareness and uses it in service to the change process. Also, the leader uses this awareness to prevent themselves from getting derailed.

8. Please indicate your thoughts on how strongly each of the following statements relates to your boss's ability to use a good sense of self.

	Poorly related	Moderately related	Strongly related
a) My boss lives by his/her values.	◯	◯	◯
b) My boss is constantly blaming other people (reverse scored).	◯	◯	◯
c) My boss is comfortable with conflict.	◯	◯	◯
d) My boss is willing to give up some of their authority.	◯	◯	◯
e) My boss shares their observations about how we are acting.	◯	◯	◯
f) My boss loves hearing how great they are (reverse scored).	◯	◯	◯

Please indicate if any of the items above are not clear or confusing. Furthermore, provide any suggestions for wording/format improvement. Finally, please indicate if the sub-construct of use of self has not been adequately covered with the items, or if any of the items needs to be moved to another section.

Step 7. Protect voices of leadership without authority

In this step, the leader offers cover to those who raise tough questions and produce stress. People who point to the disconnection between what people say and do.

9. Indicate the level of relationship between the following statements and protecting leadership without authority

	Poorly related	Modestly related	Strongly related
a) When someone disagrees with my boss, he/she retaliates against them (reverse scored).	○	○	○
b) When faced with bad news, my boss shoots the messenger (reverse scored).	○	○	○
c) During team meetings, when the team is ganging up on someone for offering a different opinion, my boss asks the rest of the team to hear them out.	○	○	○
d) My boss tries to throw people under the bus (reverse scored).	○	○	○
e) When someone says something that others are afraid to talk about, my boss shuts them down (reverse scored).	○	○	○
f) My boss surrounds themselves with yes men/women (reverse scored).	○	○	○
g) My boss makes people comfortable bringing up bad news.	○	○	○
h) My boss accepts when his/her assumptions and/or logic are rightly challenged.	○	○	○
i) My boss allows people without authority to respectfully ask hard questions about the nature of the challenges the group or organization is facing.	○	○	○

Please indicate if any of the items above are not clear or confusing. Furthermore, provide any suggestions for wording/format improvement. Finally, please indicate if the sub-construct of protecting leadership without authority has not been adequately covered with the items, or if any of the items needs to be moved to another section.

Comments

10. What else would you suggest to improve the survey?

Thank you!!!

Thank for taking the time to evaluate the content of this survey.

Appendix C: Sample Recruitment for Pilot-Social Media

Greetings friends/colleagues,

I hope you are doing well. As you probably know, I am still getting my PhD. I am in the last leg of the journey and about to start my research. My dissertation topic is developing and validating a scale to measure Adaptive Leadership with Authority. Before I fully launch my research, I need volunteers to take the survey (25-30 minutes) and a few survey takers to do a short phone interview (another 25-30min) describing their understanding of specific survey questions and their experience in taking the survey. If you are willing to take the survey, please go directly to the link below. If you are, also, willing to do the interview, please send me an e-mail at [redacted] with subject ALWAS and I will contact you to schedule a phone or skype interview. Please do not reply to this post, but instead e-mail me if you have questions.

https://www.surveymonkey.com/r/FHQ2BQW

Cheers,

Mo

Appendix D: Sample e-mail Recruitment for Pilot

Greetings friends/colleagues, hope you are doing well.

As you probably know, I am in the last leg of my PhD journey and will be conducting my research over the next few weeks. My dissertation topic is developing and validating a scale to measure Adaptive Leadership with Authority. Adaptive leadership helps groups and organizations overcome tough and complex challenges. Before I fully launch my research, I need volunteers to take the survey (25-30min) and a few survey takers to do a short phone interview (another 25-30min) describing their understanding of specific survey questions and their experience in taking the survey. If you are willing to take the survey, please go directly to the link below. If you are, also, willing to do the interview, please reply to this e-mail and we can schedule a phone or skype interview.

Link []

Best Regards,

M

Appendix E: Pilot for the Adaptive Leadership with Authority Scale

Welcome!!!!!

The purpose of this study is to develop a measurement tool for adaptive leadership with authority based on the work of Ronald Heifetz and his colleagues (Leadership without Easy Answers, The Practice of Adaptive Leadership). Adaptive leadership helps groups, organizations, and societies deal with tough and complex challenges such as global warming, world hunger, globalization, etc. If your group or organization is facing a tough and complex challenge, adaptive leadership might help you deal with it. This survey is intended to develop a tool that can help gauge the level of adaptive leadership in groups, departments, or your organizations.

Adaptive leadership is defined as leadership that helps groups, departments, and organizations face hard problems--problems that require a change in habits, values, or assumptions and often involve prolonged learning and experimentation.

This survey focuses on how you see your boss working in and responding to the complexities at work. For the purpose of this survey, boss is defined as the person who you directly report to and who evaluates your performance. This survey asks about your perception of your boss' behaviors, but it does not ask you to identify either yourself or your boss. There are minimal, if any, risks from participating. Your identity will be anonymous and confidential. No personally identifiable information will be associated with your responses to any reports of these data. The survey will take approximately 30 minutes to complete. This survey is voluntary. If you are uncomfortable at any point in taking this survey, you can stop. If you find a question confusing or unclear, you can answer it to the best of your knowledge.

This survey is part of my dissertation research at Antioch University in the PhD in Leadership and Change Program. The study results may be included in future presentations and publications. This project has been approved by the Institutional Review Board at Antioch University. If you have any questions about your rights as a research participant, please contact: Dr. Lisa Kreeger, Chair, Institutional Review Board PhD in Leadership and Change, Antioch University, e-mail: [redacted]

If you have any questions about the survey or the research study, please contact me: [redacted]

By clicking Next below you are indicating you have read and understood the above information and agree to participate in this research study. Please print a copy of this page for your records.
Thank you in advance for taking the opportunity to complete this survey reflect on work behavior in our complex world.

Mo Raei

Participation Eligibility

* 1. Are you currently employed, unemployed, or retired?

- ◯ Currently employed
- ◯ Unemployed
- ◯ Retired
- ◯ Other
- ◯ Other (please specify)

* 2. In your current work, do you report to someone else?

- ◯ Yes, I report to a boss
- ◯ No, I work for myself
- ◯ No, I am the boss

* 3. Have you worked for your current boss for at least six months?

- ◯ Yes
- ◯ No

* 4. Are you 25 years old or older?

- ◯ Yes, I am 25 or older.
- ◯ No, I am younger than 25.

For the purpose of this survey, boss is defined as the person who you directly report to and who evaluates your performance.

* 5. Thinking about how your boss responds at work, how strongly do you disagree or agree with the following statements about your boss?

	Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree
a) My boss recognizes that our challenges are complex.	○	○	○	○	○	○
b) My boss thinks that getting rid of some people will solve our problems (reverse scored).	○	○	○	○	○	○
c) My boss focuses on the big picture.	○	○	○	○	○	○
d) My boss likes to be constantly fighting fires (reverse scored).	○	○	○	○	○	○
e) My boss recognizes that we have to leave some of our old ways behind.	○	○	○	○	○	○
f) My boss recognizes that there is no quick fix for our biggest challenges.	○	○	○	○	○	○
g) My boss thinks that using technology to put policies and procedures in place will solve our problem.	○	○	○	○	○	○
h) My boss sees how a problem in one part of the organization can affect the rest of the organization.	○	○	○	○	○	○
i) My boss recognizes that change might require sacrifices.	○	○	○	○	○	○

For the purpose of this survey, boss is defined as the person who you directly report to and who evaluates your performance.

* 6. Thinking about how your boss responds at work, how strongly do you disagree or agree with the following statements about your boss?

	Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly agree
a) My boss acts as if he/she can solve all our problems by themselves (reverse scored).	○	○	○	○	○	○
b) My boss encourages us to focus on the long term, as well as the short term.	○	○	○	○	○	○
c) My boss thinks if we just had more money, all of our problems could be solved (reverse scored).	○	○	○	○	○	○
d) My boss communicates that to overcome our biggest challenge, we might have to change our priorities.	○	○	○	○	○	○
f) My boss communicates that others can contribute to finding solutions.	○	○	○	○	○	○
g) My boss knows that the problem might be in the system, not with any one individual.	○	○	○	○	○	○

For the purpose of this survey, boss is defined as the person who you directly report to and who evaluates your performance

* 7. Thinking about how your boss responds at work, how strongly do you disagree or agree with the following statements about your boss?

	Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly agree
a) My boss tries to find out how we will be affected by the proposed changes.	○	○	○	○	○	○
b) My boss reaches out to influential individuals in the organization to help identify the different stakeholders affected by change.	○	○	○	○	○	○
c) When dealing with tough problems my boss goes it alone (reverse scored).	○	○	○	○	○	○
d) My boss tries to find out who will be affected by proposed changes.	○	○	○	○	○	○
f) When dealing with work challenges, my boss asks who else needs to be involved.	○	○	○	○	○	○
g) My boss tries to understand why people might resist change.	○	○	○	○	○	○

* 8. Thinking about how your boss responds at work, how strongly do you disagree or agree with the following statements about your boss?

	Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly agree
a) My boss creates a space where it is safe to discuss what everyone knows, but may be afraid to bring out into the open.	○	○	○	○	○	○
b) My boss attacks any criticism of their ideas (reverse scored).	○	○	○	○	○	○

	Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly agree
c) My boss creates a sufficiently comfortable environment in which we can air our concerns, share our ideas, and discuss our differences.	○	○	○	○	○	○
d) My boss encourages us to tell him/her if we think that we are going in the wrong direction.	○	○	○	○	○	○
e) My boss creates an environment where we can have conflict about our ideas without getting into personal attacks.	○	○	○	○	○	○
f) My boss brings those who need to be involved to work on our challenges into the discussion.	○	○	○	○	○	○
g) My boss censors me (reverse scored).	○	○	○	○	○	○
h) My boss creates a space where it is safe to discuss what everyone knows, but might be afraid to bring out into the open.	○	○	○	○	○	○
j) My boss creates a space where I feel safe when I point to a contradiction between what we say we do and what we actually do.	○	○	○	○	○	○
k) When change is expected, my boss invites everyone who needs to be present to the table.	○	○	○	○	○	○
l) My boss allows us to occasionally act as devil's advocates.	○	○	○	○	○	○
m) When someone disagrees with the rest of the group, my boss lets us attack them (reverse scored).	○	○	○	○	○	○

* 9. Thinking about how your boss responds at work, how strongly do you disagree or agree with the following statements about your boss?

	Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly agree
a) When we are trying to avoid the real issues, my boss brings us back to the real problem.	○	○	○	○	○	○
b) My boss creates an environment where everything is urgent (reverse scored).	○	○	○	○	○	○
d) My boss knows when to bring up an important issue, and when to hold off.	○	○	○	○	○	○
e) My boss helps us prioritize dealing with the different challenges.	○	○	○	○	○	○
f) When my boss leads a meeting, getting through the agenda items is more important than dealing with how people are feeling.(reverse scored).	○	○	○	○	○	○
h) When our values seem to get in the way of work, my boss challenges them.	○	○	○	○	○	○
i) My boss expects all the changes to happen at the same time (reverse scored).	○	○	○	○	○	○
j) My boss prevents us from getting too distracted by immediate but unimportant concerns.	○	○	○	○	○	○
k) My boss can read the room during meetings.	○	○	○	○	○	○
l) My boss prevents us from becoming complacent.	○	○	○	○	○	○

* 10. Thinking about how your boss responds at work, how strongly do you disagree or agree with the following statements about your boss?

	Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly agree
a) When there is conflict in our group, my boss only gets involved if it looks like things will get out of hand.	○	○	○	○	○	○
b) When my boss lacks the solution to my problem, they ask me questions that encourage me to think about options I have not considered.	○	○	○	○	○	○
c) My boss likes to play the hero and save the day (reverse scored).	○	○	○	○	○	○
d) My boss makes me feel free to take responsibility.	○	○	○	○	○	○
e) My boss does not clean up our messes for us.	○	○	○	○	○	○
f) My boss pushes us to a breaking point (reverse scored).	○	○	○	○	○	○
g) My boss encourages us to have our own opinions.	○	○	○	○	○	○
i) My boss gives people time to learn from their mistakes.	○	○	○	○	○	○
j) My boss has to be personally involved in every problem (reverse scored).	○	○	○	○	○	○
k) My boss tolerates my mistakes if there is no major damage, and when I show that I am learning from my mistakes.	○	○	○	○	○	○

	Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly agree
l) My boss Is a good judge of how much we can handle.	○	○	○	○	○	○

* 11. Thinking about how your boss responds at work, how strongly do you disagree or agree with the following statements about your boss?

	Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly agree
a) When there is a problem, my boss immediately jumps into action (reverse scored).	○	○	○	○	○	○
b) My boss listens well before talking.	○	○	○	○	○	○
c) My boss is a control freak (reverse scored).	○	○	○	○	○	○
d) My boss Is clueless about how he/she comes across to others (reverse scored).	○	○	○	○	○	○
e) To get people to focus on the main problem, my boss tries something, and if it doesn't work, tries something else.	○	○	○	○	○	○
f) My boss takes things personally (reverse scored).	○	○	○	○	○	○
g) My boss admits his mistakes.	○	○	○	○	○	○
h) My boss lets their personal issues get in the way of their work (reverse scored).	○	○	○	○	○	○
i) My boss keeps his/her cool when things hit the fan.	○	○	○	○	○	○
j) My boss recognizes the impact of their mood and actions on others.	○	○	○	○	○	○

* 12. Thinking about how your boss responds at work, how strongly do you disagree or agree with the following statements about your boss?

	Strongly Disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly agree
a) My boss lives by his/her values.	○	○	○	○	○	○
b) My boss Is constantly blaming other people (reverse scored).	○	○	○	○	○	○
c) My boss is comfortable with conflict.	○	○	○	○	○	○
d) My boss Is willing to give up some of his/her authority.	○	○	○	○	○	○
e) My boss shares his/her observations about how we are acting.	○	○	○	○	○	○
f) My boss loves hearing how great they are (reverse scored).	○	○	○	○	○	○

* 13. Thinking about how your boss responds at work, how strongly do you disagree or agree with the following statements about your boss?

	Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly agree
a) When someone disagrees with the boss, he/she retaliates against them (reverse scored).	○	○	○	○	○	○
c) When faced with bad news, my boss shoots the messenger (reverse scored).	○	○	○	○	○	○
d) When the group is ganging up on someone for offering a different opinion, my boss asks the rest of the group to hear them out.	○	○	○	○	○	○
e) My boss tries to throw people under the bus (reverse scored).	○	○	○	○	○	○
f) When someone says something that others are afraid to talk about, my boss shuts them down (reverse scored).	○	○	○	○	○	○
g) My boss includes people who might disagree with them in the their inner circle. (reverse scored)	○	○	○	○	○	○
h) My boss makes people comfortable bringing up bad news.	○	○	○	○	○	○
i) My boss accepts when his assumptions and logic are rightly challenged.	○	○	○	○	○	○
j) My boss is comfortable with individuals respectfully asking tough questions about the nature of the challenges we are facing.	○	○	○	○	○	○

Demographic information

14. What is your highest level of education?

- ◯ Did not finish high school
- ◯ Finished high school
- ◯ Some college
- ◯ BA/B.Sc degree
- ◯ Graduate degree (MA/M.S)
- ◯ Terminal degree (Ph.D, M.D, Ed.D, etc)
- ◯ Other
- ◯ Other (please specify)

15. What is your gender?

- ◯ Female
- ◯ Male
- ◯ Other

16. In what country are you currently living?

- ◯ United States
- ◯ Canada
- ◯ Other
- ◯ Other (please specify)

17. In what industry are you currently working?

- ◯ Health care
- ◯ K-12 education
- ◯ Higher Ed
- ◯ Manufacturing
- ◯ Software
- ◯ Semiconductor
- ◯ Fashion
- ◯ Energy
- ◯ Banking/Finance
- ◯ Insurance
- ◯ Hospitality
- ◯ Food/Beverage
- ◯ Chemical
- ◯ Agriculture
- ◯ Other
- ◯ Startup

18. About how many employees work in your organization?

- ◯ Less than 10
- ◯ 10-50
- ◯ 51-250
- ◯ 251-500
- ◯ 501-1000
- ◯ Greater than 1000

19. What is your age group?

- ◯ Under 25
- ◯ 25-30
- ◯ 31-40
- ◯ 41-50
- ◯ 60-70
- ◯ > 70

20. What is your race?

- ◯ Asian
- ◯ Black or African American
- ◯ Hispanic or Latino
- ◯ Native American
- ◯ Native Hawaiian or other Pacific Islander
- ◯ White
- ◯ Other
- ◯ Other (please specify)

21. What is your boss's level within the organization?

- ◯ Lower manager/supervisor
- ◯ Middle Manager/project or program director
- ◯ Upper Manager/CEO level/Officer/Partner
- ◯ Other
- ◯ Other (please specify)

22. What is your boss's gender?

- ◯ Female
- ◯ Male
- ◯ Other

Comments

23. If your organization/team was able to overcome a challenge that required a change in values, assumptions, or habits, what is one thing that your boss, or head of the organization did that contributed the most to success.

End of Survey

Thank you for talking the time to fill out this survey. Your time is greatly appreciated. If you are will to be interviewed about your experience in taking the survey please contact me by e-mail: [redacted] The interview should take around 30min.

Disqualification

Thank you for your interest in participating in this survey. Unfortunately, you are currently not eligible to participate.

Appendix F: Recruitment Posting to Social Media-Full Study

Greetings friends/colleagues,

Hope you are doing well. As you probably know, I am still getting my PhD. I am in the last leg of the journey and will be conducting my research over the next few weeks. My dissertation topic is developing and validating a scale to measure Adaptive Leadership with Authority. Adaptive leadership can help groups and organizations overcome tough and complex challenges. If you are willing to take the survey, please go directly to the link below. It takes 25-30 minutes to complete the survey. If you have questions, please do not reply to this post, but instead e-mail at [redacted] me or IM over Facebook.

Once you have finished the survey, I would appreciate it if you would share it with your friends, colleagues, and other contacts and post on Twitter, Facebook, LinkedIn, etc. That will give others the chance to participate and increase the strength of the results.

Anyone who has a boss might qualify to take this survey. The world in general, and most organizations are facing hard and complex challenges, this survey might bring us a step closer to solving them, so spread the word.

Link []

Thank you,

Mo

Appendix G: Recruitment Posting to E-mail-Full Study

Greetings friends/colleagues, hope you are doing well.

As you probably know, I am still getting my PhD. I am in the last leg of the journey and will be conducting my research over the next few weeks. My dissertation topic is developing and validating a scale to measure Adaptive Leadership with Authority. Adaptive leadership helps groups and organizations overcome tough and complex challenges. If you are willing to take the survey (approx. 25-30min), please go directly to the link below. If you have questions, I will be happy to answer them.

Once you have finished the survey, I would appreciate it if you would share it with your friends, colleagues, and other contacts and post on Twitter, Facebook, LinkedIn, etc. That will give others the chance to participate and increase the strength of the results.

Anyone who has a boss might qualify to take this survey. The world in general, and most organizations are facing hard and complex challenges, this survey might bring us a step closer to solving them, so spread the word.

Thank you,

Mo

Appendix H: The Adaptive Leadership with Authority Scale

The Adaptive Leadership with Authority Scale © 2017 Mohammed Raei ver 6

Welcome!!!!!

The purpose of this study is to develop a measurement tool for adaptive leadership with authority based on the work of Ronald Heifetz and his colleagues (Leadership without Easy Answers, The Practice of Adaptive Leadership). Adaptive leadership helps groups, organizations, and societies deal with tough and complex challenges such as global warming, world hunger, globalization, etc. If your group or organization is facing a tough and complex challenge, adaptive leadership might help you deal with it. This survey is intended to develop a tool that can help gauge the level of adaptive leadership in groups, departments, or your organizations.

Adaptive leadership is defined as leadership that helps groups, departments, and organizations face hard problems--problems that require a change in habits, values, or assumptions and often involve prolonged learning and experimentation.

This survey focuses on how you see your boss working in and responding to the complexities at work. For the purpose of this survey, boss is defined as the person who you directly report to and who evaluates your performance. This survey asks about your perception of your boss' behaviors, but it does not ask you to identify either yourself or your boss. There are minimal, if any, risks from participating. Your identity will be anonymous and confidential. No personally identifiable information will be associated with your responses to any reports of these data. The survey will take approximately 25 minutes to complete. This survey is voluntary. If you are uncomfortable at any point in taking this survey, you can stop. If you find a question confusing or unclear, you can answer it to the best of your knowledge.

This survey is part of my dissertation research at Antioch University in the PhD in Leadership and Change Program. The study results may be included in future presentations and publications. This project has been approved by the Institutional Review Board at Antioch University. If you have any questions about your rights as a research participant, please contact: Dr. Lisa Kreeger, Chair, Institutional Review Board PhD in Leadership and Change, Antioch University, e-mail: [redacted]

If you have any questions about the survey or the research study, please contact me: [redacted]

By clicking Next below you are indicating you have read and understood the above information and agree to participate in this research study. Please print a copy of this page for your records.
Thank you in advance for taking the opportunity to complete this survey reflect on work behavior in our complex world.

Mo Raei

The Adaptive Leadership with Authority Scale © 2017 Mohammed Raei ver 6

Participation Eligibility

* 1. Are you currently employed, unemployed, or retired?

- ◯ Currently employed
- ◯ Unemployed
- ◯ Retired
- ◯ Other
- ◯ Other (please specify)

The Adaptive Leadership with Authority Scale © 2017 Mohammed Raei ver 6

* 2. In your current work, do you report to someone else?

- ◯ Yes, I report to a boss
- ◯ No, I work for myself
- ◯ No, I am the boss

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* 3. Have you worked for your current boss for at least six months?

- ◯ Yes
- ◯ No

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* 4. Are you 25 years old or older?

- ◯ Yes, I am 25 or older.
- ◯ No, I am younger than 25.

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For the purpose of this survey, boss is defined as the person who you directly report to and who evaluates your performance.

* 5. Thinking about how your boss responds at work, how strongly do you disagree or agree with the following statements about your boss?

	Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree
a) My boss recognizes that our challenges are complex.	◯	◯	◯	◯	◯	◯
b) My boss listens well before talking.	◯	◯	◯	◯	◯	◯
c) My boss pushes us to a breaking point.	◯	◯	◯	◯	◯	◯
d) My boss is comfortable with conflict.	◯	◯	◯	◯	◯	◯
e) My boss creates a space where it is safe to discuss what everyone knows, but might be afraid to bring out into the open.	◯	◯	◯	◯	◯	◯
f) My boss thinks that getting rid of some people will solve our problems.	◯	◯	◯	◯	◯	◯
g) My boss reaches out to influential individuals in the organization to help identify the different stakeholders affected by change.	◯	◯	◯	◯	◯	◯
h) My boss likes to be constantly fighting fires.	◯	◯	◯	◯	◯	◯

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For the purpose of this survey, boss is defined as the person who you directly report to and who evaluates your performance.

* 6. Thinking about how your boss responds at work, how strongly do you disagree or agree with the following statements about your boss?

	Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly agree
a) My boss can read the room during meetings.	○	○	○	○	○	○
b) My boss takes things personally.	○	○	○	○	○	○
c) My boss encourages us to have our own opinions.	○	○	○	○	○	○
d) When change is expected, my boss invites everyone who needs to be present to the table.	○	○	○	○	○	○
e) My boss communicates that others can contribute to finding solutions.	○	○	○	○	○	○
f) My boss tries to throw people under the bus.	○	○	○	○	○	○
g) My boss allows us to occasionally act as devil's advocates.	○	○	○	○	○	○
h) My boss helps us prioritize dealing with the different challenges.	○	○	○	○	○	○

The Adaptive Leadership with Authority Scale © 2017 Mohammed Raei ver 6

For the purpose of this survey, boss is defined as the person who you directly report to and who evaluates your performance

* 7. Thinking about how your boss responds at work, how strongly do you disagree or agree with the following statements about your boss?

	Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly agree
a) When dealing with tough problems my boss goes it alone.	○	○	○	○	○	○
b) My boss sees how a problem in one part of the organization can affect the rest of the organization.	○	○	○	○	○	○
c) My boss lives by his/her values.	○	○	○	○	○	○
d) My boss thinks if we just had more money, all of our problems could be solved.	○	○	○	○	○	○
e) My boss tries to find out who will be affected by proposed changes.	○	○	○	○	○	○
f) My boss recognizes that change might require sacrifices.	○	○	○	○	○	○
g) My boss brings those who need to be involved to work on our challenges into the discussion.	○	○	○	○	○	○
h) My boss focuses on the big picture.	○	○	○	○	○	○

* 8. Thinking about how your boss responds at work, how strongly do you disagree or agree with the following statements about your boss?

	Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly agree
a) My boss communicates that to overcome our biggest challenge, we might have to change our priorities.	○	○	○	○	○	○
b) My boss prevents us from becoming complacent.	○	○	○	○	○	○
c) My boss creates an environment where we can have conflict about our ideas without getting into personal attacks.	○	○	○	○	○	○
d) My boss acts as if he/she can solve all our problems by themselves.	○	○	○	○	○	○
e) My boss attacks any criticism of their ideas.	○	○	○	○	○	○
f) My boss encourages us to tell him/her if we think that we are going in the wrong direction.	○	○	○	○	○	○
g) My boss includes people who might disagree with them in the their inner circle.	○	○	○	○	○	○
h) My boss creates a space where I feel safe when I point to a contradiction between what we say we do and what we actually do.	○	○	○	○	○	○

* 9. Thinking about how your boss responds at work, how strongly do you disagree or agree with the following statements about your boss?

	Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly agree
a) My boss lets their personal issues get in the way of their work.	○	○	○	○	○	○
b) My boss shares his/her observations about how we are acting.	○	○	○	○	○	○
c) My boss recognizes that there is no quick fix for our biggest challenges.	○	○	○	○	○	○
d) My boss creates an environment where everything is urgent.	○	○	○	○	○	○
e) When my boss leads a meeting, getting through the agenda items is more important than dealing with how people are feeling.	○	○	○	○	○	○
f) My boss encourages us to focus on the long term, as well as the short term.	○	○	○	○	○	○
g) When we are trying to avoid the real issues, my boss brings us back to the real problem.	○	○	○	○	○	○
h) My boss expects all the changes to happen at the same time.	○	○	○	○	○	○

* 10. Thinking about how your boss responds at work, how strongly do you disagree or agree with the following statements about your boss?

	Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly agree
a) My boss tries to understand why people might resist change.	◯	◯	◯	◯	◯	◯
b) When our values seem to get in the way of work, my boss challenges them.	◯	◯	◯	◯	◯	◯
c) My boss tries to find out how we will be affected by the proposed changes.	◯	◯	◯	◯	◯	◯
d) My boss likes to play the hero and save the day.	◯	◯	◯	◯	◯	◯
e) When my boss lacks the solution to my problem, they ask me questions that encourage me to think about options I have not considered.	◯	◯	◯	◯	◯	◯
f) My boss has to be personally involved in every problem.	◯	◯	◯	◯	◯	◯
g) My boss tolerates my mistakes if there is no major damage.	◯	◯	◯	◯	◯	◯
h) When dealing with work challenges, my boss asks who else needs to be involved.	◯	◯	◯	◯	◯	◯

* 11. Thinking about how your boss responds at work, how strongly do you disagree or agree with the following statements about your boss?

	Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly agree
a) My boss loves hearing how great they are.	◯	◯	◯	◯	◯	◯
b) My boss gives people time to learn from their mistakes.	◯	◯	◯	◯	◯	◯
c) My boss censors me.	◯	◯	◯	◯	◯	◯
d) My boss Is clueless about how he/she comes across to others.	◯	◯	◯	◯	◯	◯
e) To get people to focus on the main problem, my boss tries something, and if it doesn't work, tries something else.	◯	◯	◯	◯	◯	◯
f) My boss makes me feel free to take responsibility.	◯	◯	◯	◯	◯	◯
g) My boss prevents us from getting too distracted by immediate but unimportant concerns.	◯	◯	◯	◯	◯	◯
h) My boss is a control freak.	◯	◯	◯	◯	◯	◯

* 12. Thinking about how your boss responds at work, how strongly do you disagree or agree with the following statements about your boss?

	Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly agree
a) When faced with bad news, my boss shoots the messenger.	○	○	○	○	○	○
b) When the group is ganging up on someone for offering a different opinion, my boss asks the rest of the group to hear them out.	○	○	○	○	○	○
c) When someone says something that others are afraid to talk about, my boss shuts them down.	○	○	○	○	○	○
d) My boss makes people comfortable bringing up bad news.	○	○	○	○	○	○
e) My boss keeps his/her cool when things hit the fan.	○	○	○	○	○	○
f) My boss accepts when his assumptions and logic are rightly challenged.	○	○	○	○	○	○
g) My boss knows when to bring up an important issue, and when to hold off.	○	○	○	○	○	○
h) My boss is comfortable with individuals respectfully asking tough questions about the nature of the challenges we are facing.	○	○	○	○	○	○

* 13. Thinking about how your boss responds at work, how strongly do you disagree or agree with the following statements about your boss?

	Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly agree
a) My boss thinks that using technology to put policies and procedures in place will solve our problem.	◯	◯	◯	◯	◯	◯
b) My boss creates a space where it is safe to discuss what everyone knows, but may be afraid to bring out into the open.	◯	◯	◯	◯	◯	◯
c) My boss Is a good judge of how much we can handle.	◯	◯	◯	◯	◯	◯
d) My boss does not clean up our messes for us.	◯	◯	◯	◯	◯	◯
e) My boss Is constantly blaming other people.	◯	◯	◯	◯	◯	◯
f) My boss admits his mistakes.	◯	◯	◯	◯	◯	◯
g) When there is a problem, my boss immediately jumps into action.	◯	◯	◯	◯	◯	◯
h) My boss recognizes the impact of their mood and actions on others.	◯	◯	◯	◯	◯	◯

* 14. Thinking about how your boss responds at work, how strongly do you disagree or agree with the following statements about your boss?

	Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly agree
a) When there is conflict in our group, my boss only gets involved if it looks like things will get out of hand.	○	○	○	○	○	○
b) My boss Is willing to give up some of his/her authority.	○	○	○	○	○	○
c) When someone disagrees with the boss, he/she retaliates against them.	○	○	○	○	○	○
d) My boss recognizes that we have to leave some of our old ways behind.	○	○	○	○	○	○
e) My boss creates a sufficiently comfortable environment in which we can air our concerns, share our ideas, and discuss our differences.	○	○	○	○	○	○
f) When someone disagrees with the rest of the group, my boss lets us attack them.	○	○	○	○	○	○

The Adaptive Leadership with Authority Scale © 2017 Mohammed Raei ver 6

Demographic information

15. What is your highest level of education?

- ◯ Did not finish high school
- ◯ Finished high school
- ◯ Some college
- ◯ BA/B.Sc degree
- ◯ Graduate degree (MA/M.S)
- ◯ Terminal degree (Ph.D, M.D, Ed.D, etc)
- ◯ Other (please specify)

16. What is your gender?

- ◯ Female
- ◯ Male
- ◯ Other

17. In what country are you currently living?

- ◯ United States
- ◯ Canada
- ◯ Other (please specify)

18. In what industry are you currently working?

- ◯ Health care
- ◯ K-12 education
- ◯ Higher Ed
- ◯ Manufacturing
- ◯ Software
- ◯ Semiconductor
- ◯ Fashion
- ◯ Energy
- ◯ Banking/Finance
- ◯ Insurance
- ◯ Hospitality
- ◯ Food/Beverage
- ◯ Chemical
- ◯ Agriculture
- ◯ Government
- ◯ Not for profit
- ◯ Other
- ◯ Startup

19. About how many employees work in your organization?

- ◯ Less than 10
- ◯ 10-50
- ◯ 51-250
- ◯ 251-500
- ◯ 501-1000
- ◯ Greater than 1000

20. What is your age group?

- ◯ Under 25
- ◯ 25-30
- ◯ 31-40
- ◯ 41-50
- ◯ 51-59
- ◯ 60-70
- ◯ > 70

21. What is your race?

- ◯ Asian
- ◯ Black or African American
- ◯ Hispanic or Latino
- ◯ Native American
- ◯ Native Hawaiian or other Pacific Islander
- ◯ White
- ◯ Other (please specify)

22. What is your boss's level within the organization?

- ◯ Lower manager/supervisor
- ◯ Middle Manager/project or program director
- ◯ Upper Manager/CEO level/Officer/Partner
- ◯ Other (please specify)

23. What is your boss's gender?

- ◯ Female
- ◯ Male
- ◯ Other

Comments

24. If your organization/team was able to overcome a challenge that required a change in values, assumptions, or habits, what is one thing that your boss, or head of the organization did that contributed the most to success.

The Adaptive Leadership with Authority Scale © 2017 Mohammed Raei ver 6

End of Survey

Thank you for talking the time to fill out this survey. Your time is greatly appreciated.

Completion code for MT: 64592

Appendix I: IRB Approval

ANTIOCH UNIVERSITY

Mo Raei <[redacted]>

Online IRB Application Approved:Development and validation of the adaptive leadership with authority scale November 10, 2017, 7:34 am

[redacted] Fri, Nov 10, 2017 at 4:34 AM

To: [redacted]

Dear Mohammed Raei ,

As Chair of the Institutional Review Board (IRB) for 'Antioch University Ph.D., I am letting you know that the committee has reviewed your Ethics Application. Based on the information presented in your Ethics Application, your study has been approved.

Your data collection is approved from 11/10/2017 to 11/09/2018. If your data collection should extend beyond this time period, you are required to submit a Request for Extension Application to the IRB. Any changes in the protocol(s) for this study must be formally requested by submitting a request for amendment from the IRB committee. Any adverse event, should one occur during this study, must be reported immediately to the IRB committee. Please review the IRB forms available for these exceptional circumstances.

Sincerely,

Lisa Kreeger

Appendix L: Codes

- Appreciation
- Ask questions
- Authentic
- Bad boss
- Being flexible
- Provide solution
- Provide idea
- Boundary buffering
- Boundary busting
- Bring out the best in people
- Bring people together
- Build consensus
- Challenge practices
- Caring
- Challenge assumptions
- Challenges us
- Change the rules
- Clarify problem nature
- Clear expectations
- Coach/mentor
- Collaborative problem solving
- Communicates changes
- Create/organize team
- Create safe space
- Create values
- Cross boundaries
- Did not provide the answer
- Empathy
- Empower
- Engage in conflict
- Engage stakeholders
- Encourage
- Get everyone on the same page
- Explored options
- Experiment
- Used fear
- Find the right people
- Fired people
- Focus on the long term
- Focus on the big picture
- Gave freedom
- Gave pointers
- Get affected party involved
- Get hands dirty
- Get input
- Get people on board
- Get people focused
- Give the work back
- Give space for learning
- Had a plan
- Identified the problem
- Improve morale
- Invite ideas
- Kept his/her cool
- Kept people on track
- Leveraged strengths
- Listen
- Make some sacrifice
- Make sure we have options
- Micro-manage
- Mobilize people
- Motivated employees
- Not clear
- Not relevant
- Open minded
- Open to feedback
- Outlined benefit of change
- Was part of problem solving group
- Partnership with employees
- Patience
- Perseverance
- Positive attitude
- Prevent complacency
- Provide reassurance
- Provide accountability
- Provide direction/vision
- Provide feedback
- Provide protection
- Provide resources
- Pushed things through
- Recognition
- Reduced distress
- Reframe the issue
- Reframe values
- Relationship
- Respect
- Rewards
- Role model
- Sequence work
- Stay out of the way
- support
- Take feedback
- Team player
- Took control
- Training
- Trust
- Used technology
- Welcomed ideas

Appendix M: Permissions for Use of Copyrighted Materials

In initial communications to all copyright holders the email stated that the dissertation would appear in:

- ProQuest Dissertations & Theses database and that ProQuest is a Print on Demand Publisher http://www.proquest.com/products-services/pqdt.html
- OhioLINK Electronic Theses and Dissertations Center and that OhioLINK ETD Center is an open access archive https://etd.ohiolink.edu/
- AURA: Antioch University Repository and Archive and that AURA is an open access archive. http://aura.antioch.edu/

Permission Re Table 2.1:

Harvard University Press

January 30, 2017

Mohammed Raei
[redacted]

RE: Permission Request

Dear Mohammed Raei: **HUP Ref. #: 39217**

Thank you for your request for permission to reproduce the following verbatim table from **LEADERSHIP WITHOUT EASY ANSWERS by Ronald A. Heifetz:**

Table 1. Situational Types, page 76

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Fees for this use have been waived.

We appreciate your interest in our publications.

With best wishes,

[redacted]
McKenzie Carnahan
Copyright and Permissions

79 Garden Street, Cambridge, Massachusetts 02138.1400 Tel 617.495.2600 Fax 617.495.5898 www.hup.harvard.edu

Permission Re Table 2.3:

ANTIOCH UNIVERSITY

Mo Raei <mraei@antioch.edu>

copyright perssmision

5 messages

Mo Raei <[redacted]> Wed, Jan 25, 2017 at 1:34 PM
To: brian.[redacted].au, j.alf[redacted]

Greetings Prof Head and Prof Alford,

I am a student at Antioch University PhD in leadership and change. I am currently in the process of writing my dissertation on development and validation of the adaptive leadership with authority scale. I am not you have the copy right for the article

"Wicked Problems: The Implications for Public Management" or there is a publisher that has the copy right. In the case of the former, I was wondering if you would grant me permission to use table 2 in my dissertation. In case someone else holds the copyright, can you please point me in their direction.

Sincerely,

Mohammed Raei

Brian Head <[redacted]> Wed, Jan 25, 2017 at 3:25 PM
To: Mo Raei <[redacted]> "j.alf[redacted].edu.au" <j.alfo[redacted]edu.au>

Dear Mo Raei

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